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PLANTÆ WRIGHTIANÆ

TEXANO-NEO-MEXICANÆ:

PART II.

AN ACCOUNT OF A COLLECTION OF PLANTS

MADE BY

CHARLES WRIGHT, A. M.,

IN

WESTERN TEXAS, NEW MEXICO, AND SONORA, IN THE YEARS 1851 AND 1852.

BY

ASA GRAY, M. D.,

FISHER PROFESSOR OF NATURAL HISTORY IN HARVARD UNIVERSITY.

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PLANTÆ TEXANO-NEO-MEXICANÆ.

PART II.

PLANTÆ WRIGHTIANÆ

TEXANO-NEO-MEXICANÆ.

PART II.

THE object of this memoir is to give a scientific account of the botanical collections made by Mr. Charles Wright, in New Mexico, or on the route thither from Eastern Texas, during the summer and autumn of 1851, and the spring and early part of the summer of the present year, 1852. In the former memoir, the publication of Mr. Wright's large collection made in 1849 was carried as far as to the end of the Order Compositæ. On the present occasion I propose to give a similar account of these more recent collections, up to the same point, and hereafter, as soon as other engagements will permit, to combine the account of the remaining portions of these several collections, along with those of Mr. Fendler and Mr. Lindheimer (the publication of which has likewise been arrested at the same point), into one general memoir.

Mr. Wright's collection in the year 1851 was made under the auspices of Colonel Graham, of the Topographical Engineers, while attached to the scientific corps of the U. S. Boundary Commission, then under Colonel Graham's charge. It is intended more particularly to illustrate the new genera and species it comprises in an appendix to Colonel Graham's Report, called for by the United States Senate: and a phytographical account of the regions traversed, and of the stations which particular plants occupy or affect, drawn up by Mr. Wright, at my request, will give the general features of the vegetation of the whole region. For the present I need only state, generally, where the collections were made. The first portion was gathered during the journey from San Antonio, Texas, to El Paso, in May and June, 1851, and therefore on ground that Mr. Wright had more leisurely traversed, two years previously, at a later season. This was forwarded to me in time for the incorporation of a part of its novelties in my former memoir (q. v. p. 17). The later portion was made from July to November, during a journey from El Paso to the copper mines of Santa Rita del Cobre, in the southwestern part of New Mexico, and thence into the northern part of the Mexican state of Sonora, as far as to Santa Cruz, returning to the copper mines by way of Guadalupe Pass, and thence back to El Paso. This collection is one of exceeding interest; and, I think, comprises a larger proportion of new species than any other that has fallen into my hands.

In the spring of 1852, while performing his official duties in the Boundary Commission, under the orders of Major Emory, the successor of Colonel Graham, Mr. Wright made an interesting vernal collection, in the vicinity of El Paso and the rancho of Frontera, and down the Rio Grande for sixty or seventy miles; also up the valley as far as Camp Fillmore, and thence into the Organ Mountains which bound the valley on the east. A hasty excursion was also made to Lake Santa Maria and Lake Gusman in Chihuahua, the latter seventy or eighty miles southwest of El Paso. These vernal collections afford many novelties, no botanist having previously explored this region at that season of the year. The remainder of the collection for this year was gathered during a rapid journey, in June and July, from New Mexico back to Eastern Texas, by the route which Mr. Wright had already twice traversed. Still, it comprises a few plants not seen before, as well as specimens in a different state or better condition.

The numbers annexed, after the habitat, are those affixed to the distributed specimens; and, to avoid confusion, they follow from the end of Mr Wright's distributed collection of 1849. Specimens not thus numbered are ticketed with their names.

HARVARD UNIVERSITY, CAMBRIDGE, October, 1852.

RANUNCULACEÆ.

Clematis Pitcheri, *Torr. & Gray*, *Fl.* 1. *p.* 10; a form with the tips of the sepals prolonged. Valley of the Limpia; June; in flower. (830.)

C. reticulata, *Walt.*, var.? foliis tenuioribus, junioribus membranaceis. — Bottom of the San Pedro; May. (831.) — No. 384 of Lindheimer's coll. of 1850, New Braunfels, is the same plant, and I think a form of C. reticulata, which is abundant in Texas. Perhaps it may prove to be a new species, but I see no character besides its thinner leaves to distinguish it.

C. Viorna, var. coccinea. C. coccinea, *Engelm. Mss.* This was collected formerly by Mr. Wright about Austin, and towards the Rio Grande. It is No. 383 of Lindheimer's collection of 1850, from rocky and shady banks, New Braunfels, named by Engelmann C. coccinea, n. sp. The leaves are more glaucous, and the thick sepals of a "pure carmine-red, very rarely purplish." But in the ordinary C. Viorna they are some shade of red-purple.

C. ligusticifolia, *Nutt.; Gray, Pl. Fendl. p.* 3. Hills along the Coppermine Creek, New Mexico; Aug., in flower. (832.)

Thalictrum Fendleri (*Engelm. in Pl. Fendl. p.* 5): dioicum, glabrum; foliis decompositis petiolatis summisve sessilibus; petiolulis patentissimis; foliolis rotundatis sæpius cordatis trilobis parvulis; sepalis late ovalibus obtusissimis; filamentis apice vix incrassatis; antheris mucronatis; carpellis oblique ovatis complanatis acute marginatis lateribus 4-5-nervato-costatis sessilibus vel in stipitem brevem contractis stigmate styliformi gracili incurvo subulatis. — Hill-sides of Coppermine Creek, Aug.; male specimens in flower; the female with immature fruit. (833.) — This species is more nearly related to T. dioicum than to T. Cornuti, having nearly the foliage and the broad sepals of the former. It likewise varies, as does T. dioicum, with sessile and short-stipitate carpels. In Fendler's plant they are sessile; but in those of Wright they are raised on a manifest though short stipe.

Thalictrum Wrightii (sp. nov.): dioicum, glabrum; foliis omnibus petiolatis 2-4-ternatisectis; foliolis cuneato-obovatis oblongisve trilobis, adultis reticulatis; floribus paniculatis sparsis; sepalis subulato-lanceolatis ovaria subæquantibus; carpellis ovatis subcompressis 8-costatis sessilibus stigmate styliformi paullo longioribus. — Mountain ravine at Santa Cruz, Sonora, Mexico; Sept. (834.) — Stems 12 to 18 inches high, slender. Radical and lowest cauline leaves 3-4-ternately compound; the upper biternate, and in the loose paniculate inflorescence 3-foliolate or even simple. Leaflets 4 to 6 lines long, in form much like those of T. Cornuti, glaucescent beneath, at length prominently reticulated. Primary petioles 6 to 12 lines long. Panicle slender, simple or sparingly compound. Pedicels filiform, 6 to 12 lines long. Staminate flowers not seen. Sepals in the pistillate flowers a line or less in length, greenish, lanceolate or nearly subulate, caducous. Ovaries 8 to 12, flattish, scarcely nerved, rather shorter than the subulate stigma. Mature carpels a line and a half or two lines long, roundish-ovate, compressed, or turgid when fully ripe, pretty strongly 4-ribbed, two of the ribs marginal and two lateral, and with four usually less conspicuous ribs alternate with these.*

ANEMONE CAROLINIANA, *Walt.; Torr. & Gray, Fl.* 1. *p.* 12. Mountain ravine near El Paso, April, in fruit. (1304.)

MYOSURUS MINIMUS, *Linn.* Low bottoms of the Rio Grande, at San Elizario; March. (1305.) Also gathered on the Rio Santa Maria, Chihuahua, by Dr. Bigelow.

RANUNCULUS DIVARICATUS, *Schrank, Bairsche Fl.* 2. *p.* 104. R. circinnatus, *Sibth. Fl. Ox. p.* 175; *Coss. & Germ. Atlas Fl. Par. t.* 1. *f.* 9. R. aquatilis, *Auct. Amer.* Bed of the Limpia (June), and of the Mimbres, New Mexico, Aug. (835.) — This is the only species of the section Batrachium that I have seen in the United States.

R. CYMBALARIA, *Pursh.; Torr. & Gray, Fl.* 1. *p.* 17. Sandy bottom of the Rio Grande, near El Paso; April, July. (836.) — This is quite like the plant of the coast of the Northern United States. I doubt if Hartweg's No. 1, and Fendler's No. 7, referred to R. tridentatus, *H. B. K.*, are distinct.

R. AFFINIS, *R. Br.; Hook. Fl. Bor.-Am.* 1. *p.* 12. *t.* 6 (fig. sinistr.). Hills along the Coppermine Creek, New Mexico; Aug. (837.) — This is a slender form of the species, quite different from Fendler's No. 8, with the radical leaves deeply cleft or parted, and the cauline mostly 3-parted, into very narrow linear divisions. In these specimens the head of fruit is nearly as short as in R. auricomus; but the carpels are rounder and less margined.

R. REPENS, *Linn.* var. MACRANTHUS, *Gray, Pl. Lindh.* 2. *p.* 141, *& Pl. Wright. p.* 7. R. macranthus, *Scheele.* Margins of the Limpia; June. (838.) — These are taller and stouter plants than those of Lindheimer, on which Scheele founded his R. macranthus, and are particularly remarkable for the great number of densely packed carpels, the edges of which are thicker and the styles longer than in Scheele's plant. Had R. macranthus been founded on the present form, I should hardly have ventured to suppress it; but the fruit of the Texan plant is just that of R. repens, var. Marilandicus; some genuine specimens of which Mr. Wright collected on the Mimbres, New Mexico. (839.)

DELPHINIUM AZUREUM, *Michx.* Along the Limpia, near its head; June. (840). — D. vimineum, *Don*, is only a coarser-leaved form of the present species, and D. virescens, *Nutt.*, is another.

D. SIMPLEX, *Dougl. in Hook. Fl. Bor.-Am.* 1. *p.* 25; *Benth. Pl. Hartw. p.* 295. Stony hills near the copper mines, Santa Rita del Cobre, New Mexico. (841.) — A pretty large form of the species. — D. variegatum, *Torr. & Gray* (D. grandiflorum, *Hook. & Arn. Bot. Beech.*), is D. decorum, *Benth. Pl. Hartw.* No. 1631, and doubtless also of Fischer and Meyer.

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* Thalictrum debile, *Buckley in Sill. Jour.* 45. *p.* 175, or a plant which I can distinguish from it only by the stronger ribs to the fruit, was formerly sparingly gathered in Texas by Mr. Wright, and also at San Felipe by Drummond (Coll. III. No. 3, bis, in herb. Hook.)

T. clavatum, *Hook. Fl. Bor.-Am.* 1. *p.* 2, non *DC.* (T. Richardsonii, *Gray, in Sill. Jour.* 42. *p.* 17), is the same as T. sparsiflorum, *Turcz.; Ledeb. Fl. Ross.* 1. *p.* 5, as is shown by original specimens in the Hookerian herbarium.

D. SCOPULORUM (sp. nov.): puberulum vel glabrum; caule folioso simplici; petiolis basi dilatatis; foliis circumscriptione orbiculatis 3–5-partitis, divisionibus alte 2–3-fidis, segmentis multilobatis vel laciniatis; racemo stricto multifloro; floribus glabriusculis; calcare sepalis longiore; petalis inferioribus bifidis intus parce barbulatis, ungue basi calcarato. — Mountain ravine, near the Mimbres, New Mexico; Oct. (842.) — I believe this is the Delphinium exaltatum of Hooker's *Flora Bor.-Amer.*, so far as relates to the plant of Drummond, from the Rocky Mountains; but it is not the D. exaltatum of the United States. The latter is a tall plant, four or five feet high, with a mostly compound raceme, and much less dissected lobes to the leaves; the segments or lobes of the upper ones are either 2–3-cleft or entire and lanceolate, so as to render very appropriate the name of D. tridactylum, under which it is well described by Michaux (foliis tripartito-palmatis, laciniis lanceolatis parceve divisis). Our present plant is only one or two feet high, including the strict raceme of pretty large indigo-blue flowers; the principal and secondary divisions of the leaves are cuneiform in outline, much lobed or cleft; the lobes of the radical leaves oblong; of the cauline, linear and short, making the leaf appear laciniately multifid. The calyx is minutely pubescent externally, and with the spur from half to three quarters of an inch in length, considerably longer than the sepals. Carpels 3, erect, nearly glabrous. — D. Californicum, which Hooker (*Bot. Beechey, p.* 317) also refers to D. exaltatum, has less laciniated leaves than the present species, and much smaller, dull-colored (greenish-ochroleucous) flowers, which are hairy outside, and with the spur not longer than the sepals.

AQUILEGIA LEPTOCERA, *Nutt. in Jour. Acad. Philad.* 7. *p.* 9.; *Hook. Bot. Mag. t.* 4407; var. FLAVA; floribus saturate flavis. — Wet places in a ravine, Organ Mountains, northeast of El Paso; April. (1306.) Also gathered by Mr. Thurber in Sonora, and on the Organ Mountains by Dr. Parry. — This appears to be only a decidedly yellow-flowered variety of the plant gathered in the Rocky Mountains by Nuttall, Burke, &c., and figured by Hooker in *Bot. Mag. t.* 4407, and previously in *Bot. Beech. t.* 72, under the name of A. macrantha; — which name should be adopted in case the A. leptoceras of Fischer and Meyer should prove to be of earlier date and a good species. With Hooker, we pass by the earlier A. cærulea, *Torr.;* the flowers being ochroleucous according to Nuttall, or greenish-white, with slight tinges of yellow and purplish, in the plant raised by Hooker from seeds sent by Mr. Burke. The clear yellow blossoms of the present plant should perhaps distinguish it specifically; but I find no other points of difference. From the extraordinary size of the flowers and their handsome color, this would be the most showy known Aquilegia, and it would probably be hardy in the Northern United States.

MENISPERMACEÆ.

COCCULUS CAROLINUS, *DC.; Gray, Gen. Ill.* 1. *t.* 28, *& Pl. Wright. p.* 7. Pebbly banks of Howard's Creek, Western Texas; July. (1307.) — A variety with the leaves very downy underneath.

FUMARIACEÆ.

Corydalis aurea, *Willd.* var. siliquis breviusculis leviter curvatis adscendentibus. — Sandy hills along the Rio Grande, near El Paso; Feb., March. (1309.) — This is intermediate between the ordinary form of the species and No. 433 of Lindheimer's collection in 1850, named C. curvisiliqua, n. sp. by Engelmann. That has still longer pods (an inch and a half long), on shorter pedicels.

PAPAVERACEÆ.

Eschscholtzia Douglasii, *Hook. & Arn. Bot. Beech. p.* 320; *Torr. & Gray, Fl.* 1. *p.* 664; var. parvula. Among rocks, on mountains near El Paso, where it was first detected by *Dr. Bigelow;* April. (1310.) — Also on the Santa Maria, near Lake Gusman. — This is the first time that an Eschscholtzia has been found east of the Pacific border of Oregon and California. It appears to be only a rather depauperate form of the Oregon species. The petals are three fourths of an inch in length.

CRUCIFERÆ.

Nasturtium palustre, *DC.* Old bed of the Rio Grande, 50 miles below El Paso, June, and Cimieluque Spring, April. (843.) — These specimens have pods as long as those of the European plant. In most North American specimens they are much shorter. (Vide *Pl. Fendl. p.* 6.)

N. obtusum, *Nutt. in Torr. & Gray, Fl.*; *Gray, Pl. Fendl. p.* 6. With the preceding.

Turritis patula, *Graham; Gray, Pl. Fendl. p.* 7. Mountains near Coppermine Creek, New Mexico. Also, in fruit, near Lake Santa Maria, Chihuahua. (1313). — To this belongs the Streptanthus virgatus, *Nutt. in Torr. & Gray, Fl.* The ripe seeds occupy a single row; and the genus is not distinguishable from Arabis.

Streptanthus longifolius, *Benth. Pl. Hartw. p.* 10; *Gray, Pl. Fendl. p.* 6. Mountains and stony hills near the copper mines; Aug. (in flower). (844.) — The leaves are only from 1½ to 2 or 3 inches in length; the radical and lower cauline ones spatulate.

S. lineariifolius, *Gray, Pl. Fendl. p.* 7, *& Pl. Wright. p.* 7. Valley of the Limpia, and pebbly beds of streams, from the Mimbres to the copper mines; also at Lake Santa Maria, Chihuahua. — Root often thickened and ligneous, certainly perennial.

S. platycarpus (sp. nov.): glaberrimus, glaucescens; foliis caulinis cordato-oblongis amplexicaulibus sinu clauso integerrimis repandisve, infimis obovato-oblongis sæpe lyrato-pinnatifidis petiolatis; siliquis oblongo-linearibus planis erectis. — ~~Valley of~~ the Pecos, on stony hills; June. (844 bis.) — Root annual. Stem rather stout, branched from the base, 1 to 2 feet high. Radical leaves 6 or 8 inches long, thickish, lyrately pinnatifid; the lower cauline similar, or obovate and entire or nearly so; the upper cauline and rameal leaves from 3 to 1½ inches long, usually quite entire, obtuse, or the upper acute, strongly cordate-clasping, with the rounded posterior lobes approximate or overlapping. Racemes loose, paniculate. Bracts none, or sometimes a minute one at the base of some of the pedicels, or with a foliaceous one subtending the lowest pedicel. Calyx violet-purple, open; the sepals 5 lines long, oblong-lanceolate, obtuse, not saccate at the base, nor carinate. Petals purple; the claw as long as the calyx; the ample and spreading lamina obovate-orbicular, 5 lines long. Anthers linear, elongated, sagittate at the base, the apex recurved. Siliques erect, straight or slightly falcate, 2 to 3 inches long, 2 or 3 lines wide, tipped with a very short style or a subsessile two-lobed stigma (the lobes alternate with the placentæ): valves flat. Seeds orbicular, broadly winged. — Allied to S. bracteatus, and especially to S. obtusifolius, *Hook.*, which is the same as S. maculatus, *Nutt.* (a prior name, though not a very good one); the leaves being either acute or obtuse, the uppermost more commonly acute. From both, the present species is at once distinguished by its broad and flat pods, which are fully 2½ lines wide, even when less than two inches in length. Subjoined are the contrasted characters of the two allied species.*

S. CARINATUS (sp. nov. *Wright. in litt.*): glaberrimus, glaucus; foliis radicalibus caulinisque inferioribus sæpissime runcinato-pinnatifidis, superioribus integerrimis oblongis seu lanceolatis basi profunde cordata amplexicaulibus sinu clauso; calyce purpureo urceolato 5-angulato, sepalis carinatis basi saccatis; petalis linearibus crispatulis purpureo pictis paullo exsertis antheras vix superantibus; siliquis immaturis lato-linearibus erectis. — Stony hills, in a cañon, on the road to Texas, about 60 miles below El Paso; March. (1312.) — Root annual or biennial. Stems one or two feet high, simple or sparingly branched. Radical and lower leaves obovate or oblong, 2 or 3 inches long, narrowed into a short petiole, either toothed, lyrate, or runcinate-pinnatifid; the upper all strongly clasping by broad and rounded lobes. Raceme loosely flowered; pedicels ascending, 2 to 5 lines long, bractless, or the lowest occasionally with a foliaceous bract. Flowers half an inch long; the strongly saccate and carinately 5-angular calyx deep purple. Petals with the recurved limb scarcely dilated, obtuse, rose-color veined with purple. The forming pods are from one to two inches long, a line and a half broad, flattish, nearly straight. Stigma sessile, 2-lobed. — A striking new species of the section Euclisia.

DRYOPETALON, *Nov. Gen.*

Calyx basi inæqualis; sepalis oblongis, 2 majoribus basi subsaccatis. Petala obovato-spathulata, inciso-5 – 7-lobata, in unguem brevem attenuata. Filamenta subulata, edentula: antheræ oblongæ, sagittatæ. Stigma sessile, subglobosum, emarginatum. Siliqua filiformis, teres, haud stipitata, polysperma; septo enervi; valvis 3-nerviis nervo medio carinatis. Semina in loculis uniserialia, e funiculo libero pendula, subcompressa, immarginata. Cotyledones ovales, planæ, radiculæ adscendenti subobliquæ accumbentes. — Herba annua vel biennis; foliis runcinato-pinnatifidis, radicalibus præsertim pube simplici molliter villosis subpetiolatis; racemis multifloris, pedicellis etiam fructiferis confertis; floribus albis.

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* STREPTANTHUS MACULATUS (*Nutt. in Jour. Acad. Philad.* 5. *p.* 134. *t.* 7): glaberrimus, glaucus; foliis caulinis cordato-oblongis amplexicaulibus sinu clauso (obtusis v. superioribus acutis), infimis obovatis; siliquis erectis anguste linearibus subtetragonis elongatis. — S. obtusifolius, *Hook. Bot. Mag*, *t.* 3317; *Torr. & Gray*, *Fl.* 1. *p.* 76; *Gray*, *Gen. Ill.* 1. *t.* 60. *f.* 4 – 7. Brassica Washitana, *Muhl. Cat.?* Stanleya Washitana, *DC.* ?

STREPTANTHUS BRACTEATUS (*Gray*, *Gen. Ill.* 1. *t.* 60, *& Pl. Lindh.* 2. *p.* 143): glaberrimus, vix glaucus; foliis caulinis cordato-amplexicaulibus, infimis obovatis nunc denticulatis sæpe lyratis lobis dentatis; pedicellis bracteatis; siliquis angustissime linearibus prælongis subfalcatis patentissimis.

DRYOPETALON RUNCINATUM. (TAB. XI.) — On mountains, near Lake Santa Maria, Chihuahua; April: mostly in fruit. (1314.) — Stem one to two feet high, branching, glabrous. Radical leaves 3 or 4 inches long, numerous, in a cluster, short-petioled, oblong or obovate, pubescent or villous, especially beneath, with soft and simple spreading hairs, deeply runcinate-pinnatifid; the lobes oval or oblong, coarsely toothed. Cauline leaves few, successively smaller and with narrower lobes, but otherwise similar, not auriculate or dilated at the base; the lower more or less petioled. Racemes one or two, or in fruit sometimes five or seven inches long. Pedicels closely approximate even at maturity, in flower ascending and 2 or 3 lines long; in fruit spreading and 5 or 6 lines long. Petals 3 lines in length, twice the length of the lax sepals, white, narrowly obovate; the limb incisely pinnatifid into 5 or usually 7 lobes, of which the upper are larger, and the lower very small, all directed forwards. Siliques about an inch and a half long, barely half a line in thickness, more or less arcuate-recurved, tipped with a small sessile stigma; the semicylindrical valves marked with a rather strong and prominent midnerve, and with a very slender lateral nerve (or at the base more than one) on each side, obscurely veiny. Seeds minute, numerous, about the width of the slender septum. Cotyledons plainly accumbent, but with the radicle slightly oblique. — With the foliage and pods of Sisymbrium, the crowded pedicels of Thelypodium, and the seeds of Arabis, but less compressed, this plant is one of the few Cruciferæ with lobed petals. In habit, as well as in the accumbent cotyledons, it is widely different from Perreymondia, *Barn.* and Schizopetalon, *Hook.* Moreover, if we neglect the petals, the terete pods will still exclude it from Arabis. Hence I have considered it the type of a new genus, and have named it from the outline of the petals, which is like that of a common oak-leaf.

THELYPODIUM WRIGHTII, *Gray, Pl. Wright. p.* 7; var. foliis caulinis superioribus laciniato-dentatis, inferioribus pinnatifidis, segmentis majoribus dentatis. — On mountains at the copper mines, New Mexico; Aug. (845.) — "Stems 2 - 5 feet high, much branched. Flowers light purple." — These specimens amply confirm the species, by their divaricate pedicels, short petals, and slender pods; they have besides deeply pinnatifid or laciniate leaves, only the uppermost and rameal ones being merely denticulate.

SISYMBRIUM CANESCENS, *Nutt.; Gray, Gen. Ill.* 1. *t.* 64. Valley of Coppermine Creek; Aug. (846.) — A form with coarsely dissected leaves and rather large flowers. Also on the Rio Grande; in February.

S. AURICULATUM, *Gray, Pl. Wright. p.* 8. Hills between the Limpia and Leona Spring; June. (1315.)

S. DIFFUSUM, *Gray, Pl. Wright. p.* 8. Mountains at the copper mines, New Mexico, at the base of rocky ledges; Aug. (847.) — Fine flowering specimens, with the (white) petals rather longer than the calyx, but scarcely equalling the style.

Erysimum asperum, *DC.* Pebbly bed of the San Pedro, Limpio, and Mimbres.

Greggia camporum, *Gray, Pl. Wright. p.* 9. *t.* 1. Valley of the Rio Grande, below El Paso; June. Also in March, in flower. (1316.) — The large flowers are seldom white; but usually rose-color, changing with age to purple.

Draba micrantha, *Nutt. in Torr. & Gray, Fl.* 1. *p.* 109; *Gray, Pl. Fendl. p.* 10. Stony hills, near El. Paso; March. (1317.) — The naked flowering stems are hairy to the top; and the petals are minute or wanting.

Vesicaria angustifolia, *Nutt. in Torr. & Gray, Fl.* 1. *p.* 101; *Gray, Pl. Lindh.* 2. *p.* 145. On the Rio Frio and Leona, Western Texas; May; — a slender form. (834.) Also in valleys near the Rio Grande, about 60 miles below El Paso; March; — a form with larger flowers and pods, the latter somewhat stipitate. (1318.) Except in the more cinereous pubescence and the want of a considerable stipe to the silicle, I cannot distinguish this from V. gracilis, *Hook.*

V. recurvata, *Engelm.; Gray, l. c. p.* 147. Stony prairies from Chicon Creek to Piedra Pinta Creek, Western Texas; May. (849.) — To this belong the specimens of Berlandier referred by Hooker to his V. gracilis; but Drummond's plant (No. 13 of the third collection), from whose seeds was raised the plant figured under this name, is the true V. gracilis. — V. lasiocarpa, *Hook.* I have seen only in the Hookerian herbarium. The subjoined character was taken from the specimen.*

V. stenophylla, *Gray, Pl. Lindh.* 2. *p.* 149: var. β. procera; foliis omnibus latioribus lineari-spathulatis vel lanceolatis. — High rocky (limestone) prairies, Turkey Creek, Texas, and westward; May. (850.)

V. stenophylla, var. γ. siliculis ovatis! Gravelly banks of the Sabinal, Texas; May. (851.) — The silicles are from 3 to 4½ lines long, ovate; the septum elliptical!

V. stenophylla, var. δ. humilis; foliis inferioribus spathulatis nunc parce dentatis; calyce pl. m. persistente! — Prairies at the head of the Limpio; also on the Pecos, &c.; June. (852.) — The condensed and broad-leaved specimens look very different from the ordinary state of V. stenophylla, into which, however, the living plants raised from their seeds evidently pass. The calyx is often persistent until the pod is nearly full grown.

V. stenophylla, var. ε. diffusa; foliis oblanceolatis et lineari-spathulatis pulchre argenteis. — V. arctica, *Gray, Pl. Fendl. p.* 9. — Stony hills on the Rio Grande, near El Paso; March. (1319.) — An early state of the species, between 850 and 852; and with an apparently annual root. To this (and not to the less silvery V. argyræa) belongs Fendler's No. 39, which is likewise an early state of this polymorphous species.

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* Vesicaria lasiocarpa (*Hook. ined.* vide *Bot. Mag. sub t.* 3464): annua vel biennis; foliis tenuiter pubescentibus haud canescentibus oblongis pinnatifido-laciniatis; racemo laxo; floribus inferioribus sæpe axillaribus; pedicellis folium adæquantibus gracilibus (12 – 15 lin. longis), fructiferis apice recurvo-nutantibus; silicula immatura estipitata globosa stylo sublongiore (cum ovario) dense hirsuto-pilosa. — Between Bexar and Trinity River, May, 1828, *Berlandier* (in herb. Hook.). — Habit and foliage much that of V. grandiflora, but greener; the inflorescence nearly as in V. argyræa. Remarkable for its hirsute-hairy fruit.

V. PURPUREA (sp. nov.): multicaulis e radice crassa perenni; foliis canescentibus, radicalibus rosulatis obovatis oblongisve nunc sinuato-panduratis in petiolum attenuatis, caulinis paucis parvis sessilibus; racemis multifloris, fructiferis elongatis; petalis roseo-purpureis; siliculis ovoideo-globosis stylo gracili longioribus. — Stony hills near El Paso; March, April. (1320.) — Flowering stems numerous from a thickened root, scape-like and simple, erect, a span, or in fruit a foot, high, including the raceme. Radical leaves one to two inches long, half an inch or more in width, contracted into a petiole of nearly the same length, canescent and slightly scabrous with a very fine and close stellate pubescence, entire, or some of them sinuate and fiddle-shaped. Cauline leaves sparse, mostly bract-like, only from 2 to 4 lines in length, obovate, spatulate, or oblanceolate. Raceme strict, in fruit 3 to 6 inches long, with the spreading or at length recurved pedicels 3 to 6 lines long. Petals spatulate-obovate, 3 lines long, light purple (destitute of any tinge of yellow); the calyx sometimes tinged with purple. Filaments enlarged at the base. Ovary ovoid, glabrous, about the length of the style: ovules 5 or 6 in each cell. Silicle 1½ to 2 lines in diameter, not stipitate; the valves hemispherical, membranaceous. Immature seeds orbicular, wingless; the funiculi free. Embryo not seen; but from the flatness of the seed the cotyledons are undoubtedly accumbent. — A genuine Vesicaria, of the section Vesicariana, with purple flowers!

DITHYREA WISLIZENI, *Engelm.; Gray, Pl. Wright. p.* 10. Valley of the Rio Grande, near El Paso, and above Doña Ana, common. (1321.) — D. Californica, *Harvey*, which I have seen in the herbarium of Trinity College, Dublin, has much smaller silicles than D. Wislizeni; they are also more deeply emarginate, the cells being nearly orbicular, and their thickened edge is tomentose.

THLASPI FENDLERI: foliis carnosulis subintegerrimis, radicalibus petiolatis ovalibus, caulinis sagittato-oblongis amplexicaulibus; racemo etiam fructifero brevi conferto; floribus majusculis; petalis calyce triplo longioribus; siliculis lato-obovatis subalatis basi acutis apice immaturis sinu aperto leviter obcordatis maturis truncato-subintegris, loculis 3 – 4-ovulatis; stylo filiformi fructu dimidio breviore. — T. cochleariforme, *Gray, Pl. Fendl. p.* 10, non *DC.*, nec *Hook.* — On the Organ Mountains, northeast of El Paso; May: mostly in fruit. (1322.) — Plant a span high, or lower; the raceme an inch, or, even in full fruit, not over 2 inches, in length; the pedicels closely approximate, spreading, in fruit 5 or 6 lines long. Petals (in Fendler's specimens) 4 lines long. Ovary obcordate by a broad and shallow sinus; the cells 3 – 4-ovulate. Ripe silicles 4 lines long, with sharp but slightly winged edges, obscurely emarginate or even truncate at the broad summit; the style a line and a half or two lines long. — The specimens of Fendler were mostly in flower only: mine with young fruit have the raceme more loose than in those gathered this spring by Mr. Wright; which, being in fruit, plainly show that I was wrong in referring the New Mexican plant to T. cochleariforme. The latter has the fructiferous raceme long and loose, and has likewise smaller flowers, narrower pods, with a deep and narrow apical sinus, and a short style. Our plant is more like T. præcox; which also has smaller flowers, and winged pods, with a very deep notch.

HYMENOLOBUS PUBENS, *Gray, Pl. Wright. p.* 9. On Rainwater Creek, between the Limpio and the Rio Grande; June. (1323.) — These are younger specimens than those gathered in 1849, and show the lower leaves, which are much like the upper, only more sinuate-toothed and inclining to spatulate. The petals are white, and scarcely longer than the calyx.

LEPIDIUM ALYSSOIDES, *Gray, Pl. Fendl. p.* 10, *& Pl. Wright. p.* 10. Valley of Live Oak Creek, Western Texas; May. Also on stony hills at the copper mines, New Mexico; Aug. (853.) Also on Rainwater Creek, June; a dwarf variety (1324); and on the Rio Grande below El Paso; a large form with the lower cauline leaves divided. (1325.)

L. MONTANUM, *Nutt. in Torr. & Gray, Fl.* 1. *p.* 116 *&* 669. Valley of Coppermine Creek, New Mexico, in sandy soil; Aug.; and west of the Chiricahui Mountains, Sonora; Sept. (854.) — This has orbicular-ovate (not elliptical) silicles, and is better described by Hooker and Arnott, in *Bot. Beechey, p.* 323, under the name of L. corymbosum, except that the older fruiting racemes are elongated. The petals are white and conspicuous; the stamens 6. Some specimens are nearly glabrous, others granulose and minutely hirsute-pubescent. I suspect that L. sordidum, *Gray, Pl. Wright. p.* 10, is only a late and depauperate state of the same species, producing diminished flowers.

L. WRIGHTII (sp. nov.): annuum, humile, hirsutulum; caulibus diffusis; ramis brevibus; foliis caulinis spathulatis dentatis vel incisis, imis et radicalibus sæpius pinnatifidis; floribus apetalis diandris; siliculis orbiculatis hispidulis apice bifido (sinu angustissmo) subalatis pedicello complanato plerumque longioribus; cotyledonibus incumbentibus. — Valley of the Pecos, in alluvial soil; May. Also sandy hills on the Rio Grande, near El Paso; March. (855.) — Plant 3 to 6 inches high, flowering when only an inch high, from an annual root. Fruiting racemes an inch long or more, dense. Silicles 2 lines long, twice as large as those of L. ruderale, beset with short and acute hispid spreading hairs; the short pedicel as broad and flat in proportion as in L. latipes, *Hook.* The low and spreading stems, the larger pods, which are decidedly wing-margined at the apex, and especially the short and flattened pedicels, distinguish this from L. ruderale var. lasiocarpum, *Engelm. in litt.* (coll. *Lindh.* 1850, No. 459, 460), which is perhaps L. lasiocarpum, *Nutt.*

L. INTERMEDIUM (sp. nov.): similis L. Virginico formæ gracili, sed cotyledonibus incumbentibus! (foliis superioribus rameisque linearibus integerrimis). — Ravines of the Organ Mountains, northeast of El Paso; April. (1320). (Also near Austin, Texas, 1848; and New Braunfels, *Lindheimer ?*) — This plant is exactly like a small and slender form of L. Virginicum; except that the upper leaves are nearly all linear and entire, and the cotyledons are incumbent. It is glabrous or nearly so; the white petals are perhaps rather larger and more conspicuous than in L. Virginicum; the stamens are only two; and the silicles are orbicular. On the other hand, it accords so perfectly with all the indigenous North American L. ruderale I possess (such, for instance, as Fendler's No. 45, except in having petals, that I cannot believe them to be specifically distinct. All these, however, differ from my specimens of L. ruderale from Europe in their orbicular (not *oval*) pods, of about twice the size.

CAPPARIDACEÆ.

Wislizenia refracta, *Engelm. in Wisl. Mem. N. Mex. p.* 15; *Gray, Pl. Wright. p.* 11. *t.* 2. Cleomella Coulteri, *Harvey, ined.* Sandy soil along the Rio Grande below and above El Paso; April, in flower; July, in fruit. Also between the Chiricahui Mountains and the San Pedro, Sonora. (856.)

Cleomella longipes, *Torr. in Pl. Wright. p.* 11. *adn.* Low, subsaline grounds, west of the Chiricahui Mountains, Sonora; Sept. (857.) — Stems 2 or 3 feet high, much branched from near the ground; the older racemes a foot long, loaded at the apex with light yellow flowers, and below with copious ripe capsules. These are triangular, turgid, the upper angles produced into a short horn. Stipe half an inch long, exceeding the pedicel. Seeds smooth, about ten in each pod.

Cleome Sonoræ (sp. nov.): annua, glabra, inermis; caule gracili erecto; foliis brevissime petiolatis trifoliolatis; foliolis anguste linearibus integerrimis, floralibus pedunculo patente subdimidio brevioribus; petalis albis mox roseis oblongis exunguiculatis sepala cuspidato-apiculata quadruplo superantibus; siliqua oblonga 6–7-sperma pendula thecaphoro longiore. — With the foregoing. — Stem 1 to 2 feet high, nearly simple. Lowest cauline leaves fallen; those extant have petioles of only a line in length, scarcely exceeding the minute and setaceous stipules; those of the upper and floral leaves still shorter, or almost wanting. Leaflets 5–8 lines long, a line or less in width, canaliculate or conduplicate in the specimens. Peduncles 6–9 lines long; the decurved stipe about 3 lines long in fruit. Petals about 2 lines long. Anthers 6, linear. Style very short. Pod torulose, about half an inch long, usually acute at both ends. Seeds smooth.

RESEDACEÆ.

Oligomeris glaucescens, *Cambess. in Jacq. Voy. Bot. p.* 24. *t.* 25. Reseda subulata, *Delile, Ill. Fl. Ægypt. p.* 15. Resedella subulata & R. dipetala, *Webb & Berth. Phyt. Canar.* 1. *p.* 107. *t.* 11. Ellimia ruderalis, *Nutt. in Torr. & Gray, Fl.* 1. *p.* 125. Valley between the Salado and Lake Santa Maria, Chihuahua; April. (1321.) Also, Bolson de Mapimi, *Dr. Gregg.* California, *Coulter.*

VIOLACEÆ.

Ionidium lineare, *Torr.; Gray, Gen. Ill.* 1. *t.* 82. Base of the Organ Mountains, northeast of El Paso; April. Valley of the Limpio; June; — the ordinary Texan form. Also, gathered on the return, on the Pecos, a narrower-leaved form, approaching No. 21 of the former collection. (1322.)

I. riparium, *H. B. K. Nov. Gen. & Spec.* 5. *p.* 378; var. æstivum, cryptopetalum, pedicellis plerisque brevissimis. — Mountains east of Santa Cruz, Sonora; Sept. (859.) — The specimens are covered with ripe fruit; many of the pods are subsessile and clustered, and the petals are very small and nearly equal, like the later, cryptopetalous flowers of many violets. Root annual. — To I. riparium, placed in the wrong section by De Candolle, belongs his I. parietariæfolium, according to Mr. Bentham.

HYPERICACEÆ.

Hypericum formosum, *H. B. K. Nov. Gen. & Spec.* 5. *p.* 196. *t.* 160; *DC. Prodr.* 1. *p.* 547. Valleys near Santa Cruz, Sonora, in springy places; Sept. (860.) — This accords very closely with the description and figure of Kunth's species. It is the same as the H. Scouleri, *Gray, Pl. Fendl. p.* 11, from New Mexico. The Oregon plant has blunter sepals with scarcely any glands along their margins; but I suspect it is not specifically distinct.

ELATINACEÆ.

Elatine Americana, *Arn.; Gray, Gen. Ill.* 1. *p.* 220. *t.* 95. Margin of mountain streams near the copper mines, New Mexico; Oct.

CARYOPHYLLACEÆ.

Silene Greggii (sp. nov. Siphonomorpha): viscoso-pubescens; caulibus e radice perenni assurgentibus ramosis foliosis; foliis basi angusta sessilibus obovatis subacutis; pedunculis semper erectis calyce longe tubuloso clavato longioribus; petalis puniceis, lamina 4-fida, lobis lineari-lanceolatis, coronæ bipartitæ segmentis truncatis apice 3–4-dentatis; capsula cylindracea breviter stipitata. — Stony hills at the copper mines, New Mexico; Aug. (861.) (Mountains near Saltillo, *Gregg*, No. 223.) — Stems 1 to 2 feet long, usually glandular and viscid. Leaves 1 to 2 inches long, broadly obovate; the bracts oblong-lanceolate. Panicle several-flowered. Peduncles about an inch and a half, the calyx nearly an inch, in length. Lamina of the petals 8 lines long; the lobes entire, the middle ones somewhat larger than the lateral, but the sinuses of equal depth. Capsule an inch long, nearly included in the calyx. — Except in the form of the leaves, this plant differs little from what I take for Silene laciniata, *Cav.* (No. 723 of Coulter's Mexican collection; also gathered by Wislizenus, at Cosiquiriachi), to which Lychnis pulchra, *Cham. & Schlecht. Linnæa*, 5. *p.* 234, may apparently be referred.

S. Wrightii (sp. nov. Siphonomorpha): undique viscoso-pubescens, multiceps e caudice lignescente crasso; caulibus adscendentibus spithamæis foliosis; foliis oblongo-lanceolatis acuminatis sessilibus, inferioribus basi attenuatis; pedunculis subsolitariis erectis foliis brevioribus calyce fructifero clavato sæpius longioribus; dentibus calycis subulatis tubo vix dimidio brevioribus; petalis albis, lamina 4-fida, lobis lateralibus minoribus, centralibus 2–3-lobatis incisisve seu integris; coronæ segmentis ovatis integerrimis; capsula oblonga stipite paullo longiore. — In crevices of rocks, mountain-sides near the copper mines, New Mexico; Aug. to Oct. (862.) — This is a low, very glutinous-pubescent species, forming tufts from a thickened root; the weak and at length diffuse crowded stems from a span to a foot long. Leaves 2 inches long, thin; the lowest tapering into a margined petiole. Calyx 7 to 9 lines long. Lamina of the petals 3 lines long, sometimes nearly 4-cleft, often with the middle lobes incised.

Stellaria prostrata, *Baldw. in Ell. Sk.* 1. *p.* 518. Along the Limpio, near its head; June. (863.)

ARENARIA DIFFUSA, *Ell. Sk.* 1. *p.* 519. A. nemorosa, *H. B. K. Nov. Gen. & Spec.* 1. *p.* 35. Spergulastrum lanuginosum, *Michx.* Stellaria elongata, *Nutt.* S. lanuginosa, *Torr. & Gray, Fl.* 1. *p.* 187; *Gray, Pl. Fendl. p.* 13. Hills near the copper mines, New Mexico; and near Santa Cruz, Sonora. (864.) — This is a true Arenaria, as the genus is characterized by Fenzl. The petals, which are present in some of these specimens, are entire, and nearly as long as the calyx. This species extends southward to the Quitensian and the Peruvian Andes. The testa of the seed is very smooth and shining. In the nearly allied A. Benthamii, which Mr. Wright formerly gathered in Texas, the testa is tuberculate.

A. SAXOSA (sp. nov.): multiceps e radice perenni; caulibus subsimplicibus erectis (2–3-pollicaribus) foliosissimis puberulis; foliis oblongo-lanceolatis acutato-mucronatis uninerviis glabriusculis subcarnosis; pedunculis folia æquantibus; sepalis ovato-oblongis acutis margine scariosis carinato-uninerviis petalis brevioribus. — Stony hills at the copper mines, New Mexico; Aug. (865.) — Stems very numerous and tufted, erect, or somewhat spreading, very leafy, 1–5-flowered. Leaves 2 or 3 lines long, crowded, longer than the internodes, minutely scabrous-puberulent, scarcely ciliolate, thickish, rather strongly one-nerved. Peduncles simple, 2–4-lines long. Sepals about 2 lines long, a little shorter than the obovate-oblong white petals. Stamens 10: filaments glabrous. Styles 3. Ovary globose-ovoid, about 40-ovulate. Capsule rather longer than the calyx, 3-valved at the apex; the valves soon 2-cleft. Seeds rather numerous, smooth, not strophiolate. — The plant I named Mœhringia umbrosa in *Pl. Fendl. p.* 13, is probably a form of the present species, with a looser mode of growth, and with much longer and smoother leaves. I have no fruit of that plant. The present plant has estrophiolate seeds, and therefore cannot be a Mœhringia.

CERASTIUM VULGATUM, *Linn.; Fenzl in Ledeb. Fl. Ross.* 1. *p.* 408. C. triviale, *Auct.* Ravines, on the Organ Mountains, New Mexico, April. (1323.)

DRYMARIA GLANDULOSA, *Bartl. in Presl, Rel. Hænk.* 2. *p.* 9. D. ramosissima, *Schlecht. in Linnæa,* 12. *p.* 206? D. cordata? *Gray, Pl. Fendl. p.* 13. New Mexico near the copper mines; Aug. and Oct. (866.) — Distinguished from D. cordata by the viscid-glandular pubescence of the branches, pedicels, and calyx; the more glomerate flowers; and the longer, sharply acuminate sepals. The specimens stick to the paper in which they were dried. The stamens are only 3.*

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* No. 722 of Coulter's Mexican collection can hardly be separated with propriety from this genus, although it has entire petals and axillary flowers. It may be characterized as follows: —

DRYMARIA XEROPHYLLA (sp. nov.): glabra; caulibus decumbentibus ramisque floridis foliosis; foliis subsessilibus ovatis cuspidato-acuminatis chartaceo-membranaceis siccis 3–5-plinerviis venosis; stipulis plurisetosis; cymulis axillaribus 1–5-floris subsessilibus folia haud superantibus; sepalis oblongis obtusis 3-nerviis; petalis minimis spathulatis integris; ovario 3-ovulato. — The petals, which are not half the length of the sepals, are quite entire, or barely emarginate, or rarely one or two of them 2-lobed at the apex; they appear to be hypogynous. The stamens are only 3, with their filaments dilated at the base and connate into a ring. Capsule three-valved, one-seeded; the seed smooth. Embryo as in the genus. Leaves 3 to 5 lines in length.

D. polycarpoides, *Pl. Fendl. l. c.*, is, I believe, not distinct from D. crassifolia, *Benth. Bot. Voy. Sulph.*, which is the species inadvertently referred to under the name of D. glauca.

D. SPERGULOIDES, *Gray, Pl. Fendl. p.* 11. Stony hills, at the copper mines, New Mexico; Aug. and Oct. (867.) — The autumnal specimens, more branched, and loaded with fruit, have the pedicels all erect. The seeds are nearly smooth.

D. TENELLA, *Gray, Pl. Fendl. p.* 12. Banks of mountain torrents, near the copper mines, New Mexico; Aug., in flower; and on hill-sides under bushes, in fruit, Oct. (868.) — The young specimens are depauperate, only two inches high, with the spatulate-oblong or linear leaves 2 or 3 lines long. The later specimens are 3 or 4 inches high; the principal length of the stem of one almost capillary internode, which is often 2 inches long; the leaves very narrow and 6 lines long. The cyme effuse and many-flowered; the central pedicels all much shorter than the calyx. Capsule about the length of the calyx. Seeds very minutely roughened.

D. EFFUSA (sp. nov.): annua, glaberrima, nisi internodiis supra medium glandulosis viscosis; caule filiformi superne ramoso in cymam patentissimam multifloram diliquescente; foliis anguste linearibus sessilibus imis spathulatis parvis; pedicellis bracteas ovatas scariosas vix excedentibus flore brevioribus; sepalis ovatis obtusis 3-nerviis leviter scarioso-marginatis petalis alte bifidis (lobis oblongis) brevioribus capsulam 3-4-spermam adæquantibus; seminibus læviusculis. — Mountains east of Santa Cruz, Sonora; Sept. (869.) — Stems 3 to 5 inches high, with repeatedly forked and spreading branches. Leaves much shorter than the internodes. Calyx barely a line in length. Petals considerably exserted, and also larger and broader than in D. tenella. Stamens 5. Ovary subsessile, 5-7-ovulate. — Distinguished from the preceding by the viscous glandulosity of the upper half of all the internodes (except the very short pedicels), by the larger petals, &c.; from D. nodosa, *Engelm.*, which exhibits the first-named character, by the considerably smaller flowers, with obtuse and not at all rigid sepals, which are no longer than the capsule.

SPERGULARIA RUBRA, *St. Hil.; Torr. & Gray, Fl.* 1. *p.* 175; — diffuse or prostrate and small-flowered forms. Low banks of the Rio Grande at San Elizario; June. (1324.)

MOLLUGO VERTICILLATA, *Linn.* Hills near the copper mines, New Mexico; Aug.

PARONYCHIA JAMESII, *Torr. & Gray, Fl.* 1. *p.* 170; *Pl. Wright. no.* 27. *p.* 13. Hills of the San Pedro; May. On mountains near El Paso; April. (870.) Also on stony hills of the Pecos; July; — a slender and smoother variety, approaching P. Lindheimeri, but with a ligneous perennial root. (1325.)

P. LINDHEIMERI, *Engelm. in Pl. Lindh.* 2. *p.* 152. Hills of the Pecos; July. (1326.)

PORTULACACEÆ.

SESUVIUM PORTULACCASTRUM, *Linn.* var. floribus subsessilibus. (S. sessile, *Pers.*) Low bottoms of the Rio Grande below El Paso. (871.) — Inner face of the sepals, and the stamens, bright red.

PORTULACA LANCEOLATA, *Engelm. in Pl. Lindh.* 2. *p.* 154. On the Rio Grande, and west of the copper mines, New Mexico; Aug. (872.)

P. RETUSA, *Engelm. l. c. & Pl. Wright. p.* 13. Doña Ana, New Mexico; July. — "Petals small, yellow, slightly emarginate."

P. PILOSA, *Linn.;* var. diffusa, floribus parvis. From the Limpio to the copper mines, New Mexico. (873.) — Var. erecta, floribus capsulisque magnis, petalis aurantiacis siccate rubris. Near the copper mines, New Mexico. (874.)

TALINUM PARVIFLORUM (*Nutt. in Torr. & Gray, Fl.* 1. *p.* 197; *Gray, Pl. Fendl. p.* 14): humile; staminibus 5; calyce tardius deciduo; capsula ovali; petalis pallide roseis vel lilacinis; cæt. fere T. teretifolii. — Stony hills at the copper mines; Aug. (871.) Also near El Paso; April.

T. AURANTIACUM, *Engelm. & Var. β.* ANGUSTISSIMUM, *Gray, Pl. Wright. p.* 14. Western Texas to the Pecos; also, in 1852, between the Limpio and the Rio Grande. (876.) — According to Mr. Wright, there are two forms of this species, which in the living plant appear quite distinct; the one, with copper-colored flowers, being more succulent, and usually with purple stems; the other has pale-yellow flowers, and usually narrower leaves. The dried specimens cannot be satisfactorily distinguished.

T. REFLEXUM, *Cav. Ic.* 1. *p.* 1. *t.* 1; *DC. Prodr.* 3. *p.* 357. T. spathulatum, *Engelm. in Pl. Wright. p.* 14. Rocky banks of Providence Creek, Rock Creek, &c., between the Limpio and the Rio Grande; June. (1327.) — Leaves mostly broader than in Wright's No. 35. "Flowers yellow. Stems spreading or decumbent."

TRIANTHEMA MONOGYNA, *Linn.* Fields near El Paso; July.

MALVACEÆ.

CALLIRRHOE INVOLUCRATA, *Gray, Pl. Fendl. p.* 15, *& Gen. Ill.* 2. *t.* 117. On the San Pedro and Pecos; May. (877.)

C. DIGITATA, *Nutt.; Gray, l. c.* Prairies of the Hondo, Texas; May. (878.)

C. PEDATA, *Gray, l. c.* (excl. syn.), *& Pl. Wright. p.* 15. Margin of thickets, from the Hondo to the Sabinal; May.

C. PEDATA, var. minor, floribus parvulis pallidis. Along the San Pedro; May. (879.)

SIDALCEA MALVÆFLORA, *Gray, Pl. Wright. p.* 16. Along the Mimbres, New Mexico; Aug. (880.)

MALVASTRUM COCCINEUM, *Gray, Pl. Fendl. p.* 24, *& Pl. Wright. p.* 16. West of the Limpio; June. (881.)

M. LEPTOPHYLLUM, *Gray, Pl. Wright. p.* 17. Stony hills, Escondido Springs, Western Texas; June. Prairies, from Santa Barbara to the copper mines, New Mexico; July. (882.)

M. PEDATIFIDUM, *Gray, Pl. Wright. p.* 17; forma humilis; ramis floridis simpliciusculis in racemum majus elongatum strictum abeuntibus; segmentis foliorum parce incisis vel subintegris. — Stony hills near El Paso; and in the valley of the Salado, Chihuahua; April. (1328.) — This is an earlier and simpler state of the species than Mr. Wright's No. 42; usually with larger flowers; the strict and naked racemes often 6 inches long. The lowest leaves are ovate or roundish in circumscription, and pedately 3-5-lobed. The Chihuahua specimens are more scurfy, and their flowers more purple.

Sphæralcea hastulata, *Gray, Pl. Wright. p.* 17. Valley of the Pecos, in alluvial soil; June. Sandy valleys of the Mimbres Mountains; Aug. (883.)

S. Fendleri, *Gray, Pl. Wright. l. c.;* var. foliis subtus plerumque subcanescentibus. On the Mimbres; and mountain-sides near the copper mines; July. (884.)

S. incana, *Torr.*, var. dissecta, *Gray, Pl. Wright. l. c.* Hill-sides, at Conde's Camp, west of the copper mines, New Mexico; Aug. (885.)

S. incana? var. oblongifolia: foliis inferioribus ovatis, superioribus rameisque oblongis vel lanceolatis, omnibus pl. m. trilobis lobo medio elongato vel subhastatis dentatis furfuraceo-canescentibus (2–3-pollicaribus). — Banks of the Rio Grande near San Elisario; April. (1329.) — A puzzling form, manifestly inclined to run into the following, some specimens of which have the lower leaves hastately somewhat 3-lobed.

S. angustifolia, *Spach;* var. foliis lanceolatis, inferioribus nunc hastato-subtrilobatis! Alluvial soil on the Piedra Pinta, Western Texas; and around El Paso; July. (886.)

S. angustifolia, var. floribus et fructibus minoribus, *Gray, Pl. Wright. p.* 21. Between Providence Creek and the Rio Grande; June. (887.)

S. Wrightii (sp. nov.): pube laxa canescenti-tomentosa, sesquipedalis; caulibus e basi suffrutescente plurimis simplicibus apice longe racemoso-floriferis; foliis cordato-rotundis longe petiolatis, radicalibus inciso-sublobatis crenatis, caulinis 3–5-fidis pedatisve, lobis cuneatis crenato-dentatis; capsula 12–15-cocca calyce æquilonga, coccis mucronulatis dispermis. — On a mountain, near Lake Santa Maria, Chihuahua, April; chiefly in fruit. (1330.) — This species has much the habit of a Sidalcea, having mostly simple and virgate stems, long-petioled leaves with rounded cordate outline, and nearly naked, racemose inflorescence. It is from 8 to 20 inches high; the leaves about an inch in diameter, shorter than their petioles. Petals apparently purple, 4 or 5 lines in length. Capsule large in proportion, 3 lines long, ovoid-subglobose, with the apex truncate.

Sida hederacea, *Torr. in Pl. Fendl. p.* 23; *Gray, Pl. Wright. p.* 18. Bottoms of the Rio Grande below El Paso; May, June. (888.)

S. lepidota, *Gray, Pl. Wright. p.* 18. Around prairie-dog holes, between Providence Creek and the Rio Grande; June. Sandy valleys of the Mimbres Mountains; July. (889.) "Corolla light yellow."

S. lepidota, var. sagittæfolia, *Gray, l. c.* Plains, from Escondido Creek to the Pecos; June. (1331). — Much finer specimens than those gathered in 1849 (No. 47); all with the same long and narrow leaves, with 2 or 3 sharp lobes at the base.

S. longipes, *Gray, Pl. Wright. p.* 19. Rocky hills, from Live Oak Creek, Texas, to the Pecos. (890.)

S. Elliottii, *Torr. & Gray, Fl.* 1. *p.* 232? var.? humilis; floribus minoribus. — Between the Limpio and the Rio Grande; and on mountains at the copper mines, New Mexico; Aug. — A dwarf perennial with "deep yellow petals." There is no mature fruit. The carpels appear to be muticous.

S. angustifolia, *Lam.; Cav. Diss.* 1. *p.* 14. *t.* 2. S. heterocarpa, *Engelm. in Pl. Lindh.* 2. *p.* 163. Prairies at Santa Cruz, Sonora; Sept. (891.)

S. FILICAULIS, *Torr. & Gray, l. c.* Live Oak Creek, Western Texas. (1332.)

S. FILICAULIS, *Torr. & Gray;* var. SETOSA: ramis adscendentibus pedunculis calycibusque pilis longis patentissimis setosis. — Bottoms of the San Pedro, Texas; May. Between Santa Barbara and the copper mines, New Mexico; July. (892.) — In *Pl. Lindh.* 2. *p.* 163, I have alluded to the slender hairs which beset the young stems of S. filicaulis; but in the present specimens they are vastly more conspicuous, and the stems are less procumbent; so that, at first sight, they would be taken for a different species. Dr. Gregg gathered this form in Chihuahua, and at Monterey. It is very likely to be the Sida diffusa, *H. B. K.*, the branches of which are said to be "molliter pilosi"; for, although the corolla is yellow, they often turn purplish in drying.

S. PHYSOCALYX, *Gray, Pl. Lindh.* 2. *p.* 163, *& Pl. Wright. p.* 20. Prairies of Western Texas; May.

ANODA PENTASCHISTA (sp. nov.): scabrido-pubens; foliis subtus cinereis, infimis cordatis, caulinis hastato-trilobis, summis hastato-lanceolatis vel linearibus pedunculo brevioribus; petalis flavis integerrimis lacinias calycis triangulares acuminatas paullo superantibus; capsula vix depressa 5-carpellari mutica calycem æquantibus. — Valley between Ojo de Gavilan and Conde's camp, beyond the copper mines, New Mexico; Aug. (893.) — Root annual. Stem erect, paniculately branched, 1 or 2 feet high. Leaves an inch to an inch and a half long, more or less toothed; the upper successively becoming lanceolate or linear, but always more or less hastate-lobed at the base, 5 to 12 lines long. Flower only 3 lines long! Calyx cinereous-pubescent like the lower surface of the leaves, not much spreading even in fruit, in length scarcely equalling the capsule. Corolla bright yellow; the obovate petals only about 2½ or 3 lines in length. Ovary 5-celled, with a solitary resupinate ovule in each cell. Capsule puberulent, somewhat 5-lobed, only moderately flattened at the top; the 5 carpels opposite the sepals, obscurely umbonate on the back; the dissepiments entirely evanescent, while the broad dorsal portion of each carpel is wrapped, in the manner of the genus, half round the turgid seed. — Although the fruit is only pentacarpellary, and little depressed, its whole structure and dehiscence are the same as in Anoda, with which the foliage likewise accords. The only character left to distinguish Anoda from Sida is the obliteration of the dissepiments of the fruit. √ [illegible]

A. WRIGHTII (sp. nov.): caulibus pedunculis petiolisque scabro-pubescentibus et viscosis; foliis glabriusculis obtusis, infimis ovatis grosse crenatis, cæteris oblongo-ovatis seu triangulato-lanceolatis integris aut vix subtrilobis basi haud cordatis; pedunculis folium superantibus; petalis flavis apice obsolete crenulatis calycis laciniis ovatis obtusiusculis duplo longioribus; capsula hirsuta 11–12-carpellari stellariformi calyce patentissimo paullo breviore; carpellis dorso crista calcariformi obtusa appendiculatis. — On the summit of mountains near the copper mines, New Mexico; Oct. (894.) — Root annual. Stems one or two feet high, with divergent branches, rough with a rather coarse and viscous pubescence. Leaves slightly if at all subcordate, green both sides, 10 to 18 or 20 lines long, obscurely if at all lobed, not hastate nor acuminate. Lower peduncles 1½ to 2 inches long; the upper about an inch long. Sepals barely 3 lines long, united below the middle, triangular-ovate, not pointed, in fruit becoming 4 or 5 lines long, and appearing acuminate by the involution of the edges towards the tip. The fructiferous calyx is as widely spreading as in A. hastata. Petals about 5 lines long, yellow, the nearly truncate summit obscurely erose-crenulate. Fruit depressed and stellariform, as in the genus generally, about 5 lines in diameter, very hirsute, usually of 11 carpels; each of them produced on the back into an appendage as long and conspicuous as in many specimens of A. hastata (*Gen. Ill.* 2. *t.* 124), but broader and more spur-shaped. Seed as in the other species. — I have not seen A. crenatiflora, *Ort.* (A. parviflora, *Cav.*); but judging from the description, and from the figure of Cavanilles, our species is to be distinguished by its undivided and not cordate leaves, its glutinous pubescence, its longer peduncles, its petals about twice the length of the calyx, the obtuse lobes of the latter, and the manifest dorsal appendage of the carpels. A. pubescens, *Schlecht.* is said to have deeply cordate and sharply acuminate leaves, very acutely acuminate sepals, and muticous carpels. The character of A. lanceolata, *Hook. & Arn.* (of which the corolla is doubtfully said to be yellow), accords better with our plant; but that has the leaves velvety underneath, and the petals (nine lines long) thrice the length of the calyx.

A. HASTATA, *Cav. Diss.* 1. *t.* 11. *f.* 2; *Gray, Gen. Ill.* 2. *t.* 127; var. depauperata, floribus parvis. — Mountain valleys at the copper mines, New Mexico, and near Santa Cruz, Sonora; Aug., Sept. (895.) — Another small-flowered form of this, or perhaps a different species, was sparingly gathered, in flower only, in valleys of Chiricahui Mountains.

ABUTILON WRIGHTII, *Gray, Pl. Wright. p.* 20. Rocky hills, from Escondido Creek to Comanche Spring, Western Texas; June. (896.)

A. TEXENSE, *Torr. & Gray, Fl.* 1. *p.* 231; *Gray, Pl. Wright. p.* 21. Alluvial soil, from the Piedra Pinta to the Pecos, Texas; May, June. (897.)

A. PARVULUM, *Gray, Pl. Wright. l. c.* Stony prairies, Comanche Spring and Chicon Creek, Texas; May. Also between the Limpio and the Rio Grande. (898.)

A. SONORÆ (sp. nov.): caule erecto petiolisque pilis longis patentissimis hirsutis; foliis rotundo-cordatis acuminatis subtrilobis crenatis vel duplicato-dentatis 7–9-nerviis supra velutino-puberis subtus mollissime cano-tomentosis; stipulis caducissimis; floribus laxe paniculatis parvulis; pedunculis plurifloris; calycis laciniis ovatis acutiusculis petalis flavis capsulaque puberula apice truncata dimidio brevioribus; carpellis 7–11 chartaceis mucronatis trispermis. — Hill-sides on the Sonoita, in the northern part of Sonora; Sept. (899.) — Stem 1 to 4 feet high, herbaceous, somewhat branched, below densely, above more sparsely hirsute, as well as the petioles, with shaggy and rather stiff spreading hairs. Leaves 3 or 4 inches in diameter, the deep sinus nearly closed. Floral leaves very small; the large and loose terminal panicle nearly naked. Peduncles mostly several-flowered, nearly glabrous. Pedicels articulated towards the summit. Petals only 3 lines long. Capsule 4 or 5 lines long, fully twice the length of the calyx; the carpels not inflated, their apex dorsally tipped with a short and abrupt mucro.

HIBISCUS (BOMBICELLA) DENUDATUS, β. INVOLUCELLATUS, *Gray, Pl. Wright. p.* 22.

Mountains, between the copper mines, New Mexico, and Santa Cruz, Sonora; Sept. (900.)

H. (Bombicella) Coulteri, *Harv. in Pl. Wright. l. c.* With the preceding. (901.)

Pavonia Wrightii, *Gray, Gen. Ill.* 2. *t.* 130, *& Pl. Wright. p.* 72. Between the Leona and the Sabinal, Western Texas. (1333.)

BYTTNERIACEÆ.

Melochia pyramidata, *Linn.* Margin of a stream at Painted Caves, on the San Pedro, Western Texas; July. (1334.)

Hermannia Texana, *Gray, Gen. Ill.* 2. *t.* 135, *& Pl. Wright. p.* 34. Stony prairies of Chicon Creek, Western Texas; May. (902.)

Ayenia pusilla, *Linn.* var., *Gray, Pl. Wright. p.* 24. *no.* 645. Rocks between Eagle Springs and the Limpio; June. Also (with still narrower leaves) in Sonora, between the Chiricahui Mountains and the San Pedro; Sept. (903.) — The fertile stamens adhere to the petals and come away with them. The anthers are not bilocular, as the genus is described, but trilocular!

A. microphylla (*Gray, l. c.*): foliis cordato-rotundis; floribus in axillis solitariis breviter pedicellatis; petalorum lamina absque glandula dorsali; tubo stamineo brevissimo cyathiformi; antheris fertilibus (trilocularibus!) sessilibus sterilibus difformibus brevioribus; ovario haud stipitato. — Rocky ravines near Frontera, New Mexico; May: in flower and fruit. (1335.) — I have completed the character of the species from the flowering specimens gathered in the spring of the present year. The flowers are smaller than in A. pusilla; and the (dark red) petals have shorter claws. The lamina of the latter, when outspread, has nearly the shape of the leaf of Liriodendron; the two terminal angles are pointed and apparently glandular at the tips, by which they adhere to the column; the notch bears an apical acumination which is strongly recurved, but is not produced into a gland, nor is there any such dorsal appendage as in A. pusilla. The very short and cup-shaped stamineal column is terminated by five thick lobes, or deformed sterile anthers, alternating with the petals and much larger than the fertile anthers; they are somewhat two-lobed, like an ordinary anther, and bear a strongly reflexed and acuminate apical appendage, like that of the petals. The fertile anthers are sessile in the sinuses, and consist of *three* oval parallel cells, opening longitudinally. The ovary and capsule are nearly as in A. pusilla, except that they are not raised on a stipe. The obovate seeds are rugose-corrugated.

Waltheria detonsa (sp. nov.): pube brevissima cinereo-tomentulosa; caulibus e basi lignescente plurimis gracilibus; foliis ovalibus denticulatis haud plicatis; glomerulis axillaribus breviter pedunculatis; calycibus et ovario canescentibus (haud villosis). — Rocky hills on the Sonoita, near Deserted Rancho, Sonora; Sept. (904.) — The slender stems are a foot or less in height; the leaves about an inch long, not plicate-veined nor velvety like those of W. Americana; the heads are also smaller, and the calyx not all hirsute-villous. Mr. Bentham informs me that he has apparently the same species from British Guiana; No. 497 of Rob. Schomburgk's second collection, and No. 761 of Rich. Schomburgk.

LINACEÆ.

LINUM PERENNE, *Linn.* Valley of the Pecos, Limpio, &c.; very common. (905.)

L. RUPESTRE, *Engelm. in Pl. Lindh.* 2. *p.* 232, *& Pl. Wright. p.* 26. Crevices of rocks on the Sabinal. (1336.)

L. RIGIDUM, *Pursh, Fl.* 1. *p.* 210. L. puberulum, seu rigidum var. puberulum, *Engelm. in Pl. Wright. p.* 25. Stony hills near the Rio Grande above El Paso; April. (1337.) — These fine flowering specimens have the bright yellow petals (deeper-colored next the base) half an inch or more in length, and therefore nearly as large as those of L. Berlandieri. From this it is distinguished by its glaucescent appearance, its more subulate erect leaves, and especially by the whole face of the dissepiments being excessively thin and hyaline, — a character pointed out by Dr. Engelmann. Stipular glands are not unfrequently visible.

L. ARISTATUM, *Engelm. in Wisliz. Mem. N. Mex. p.* 101; *Gray, Pl. Wright. p.* 26. Sandy hills on the Rio Grande near El Paso; April. (1338.) — Petals 4 or 5 lines in length, light yellow.

OXALIDACEÆ.

OXALIS DICHONDRÆFOLIA, *Gray, Pl. Wright. p.* 27. Shady bottoms of the San Pedro, Western Texas; May. (906.)

O. WRIGHTII, *Gray, l. c.* Painted Camp, near the head of the Limpio. Also, in 1852, on Rainwater Creek and Rock Creek; June. (907.) — One of the forms in the collection of 1852 is dwarf; the other is fully as large as the specimens gathered in 1851. The peduncles, often an inch and a half long, are more commonly 2-flowered; and one of the pedicels is occasionally bibracteolate in the middle. Mr. Wright informs me that the petals are yellow.

O. VIOLACEA, *Linn.* Stony hills at the copper mines, New Mexico; Aug. (908.) — A small-flowered variety, the same as No. 91 of Fendler's collection, which was erroneously called O. vespertilionis in *Pl. Fendl. p.* 27. The latter name, being preoccupied by Zuccarini, must be replaced by that of O. DRUMMONDII.

O. DECAPHYLLA, *H. B. K. Nov. Gen. & Spec.* 5. *p.* 238. *t.* 468; *Zucc. Mon. Oxal. no.* 26, *& Nachtr. Oxal. p.* 41. Stony hills at the copper mines, New Mexico; Aug. (909.) — Leaflets 6 to 8, or rarely only 3 in depauperate specimens. The flowers accord with Zuccarini's character, rather than Kunth's; for the "purple" flowers are twice the size of those of O. stricta; the filaments are glabrous and shorter than the styles, which are hirsute. There is probably a sexual dimorphism.

GERANIACEÆ.

GERANIUM CÆSPITOSUM, *James; Gray, Pl. Fendl. p.* 25. Hill-sides, Mule Creek and Coppermine Creek, New Mexico; Aug. (910.) — Varieties with shorter peduncles, and mostly with larger leaves, than in Fendler's specimens.

G. CAROLINIANUM, *Linn.* Banks of Lake Santa Maria, Chihuahua; April; just coming into flower.

ERODIUM TEXANUM, *Gray, Gen. Ill.* 2. *t.* 150. Hills above El Paso, April. (1339.)

ZYGOPHYLLACEÆ.

Kallstrœmia grandiflora, *Torr. in Pl. Wright. p.* 28. Near Ojo de Gavilan, beyond the copper mines, New Mexico; Aug. (911.) — The same as Coulter's and Emory's specimens. Leaflets often 6 pairs. Flowers very large and showy.

K. maxima, *Torr. & Gray*, — a depauperate variety. East of the Rio Grande, New Mexico; June. (912.)

Larrea Mexicana, *Moricand; Gray, Pl. Wright. p.* 28. Bottoms of the San Pedro, Western Texas; May. (913.)

RUTACEÆ.

Kœberlinia spinosa, *Zucc.; Gray, Pl. Wright. p.* 30. East of the Rio Grande, New Mexico; June, in flower. (914.)

Rutosma Texanum, *Gray, Gen. Ill. t.* 155, *& Pl. Wright. l. c.* Stony prairies of the Sabinal, and near Comanche Spring, Western Texas; May, June. (915.) — Corolla dull yellow.

R. Texanum, var. corolla purpurea! Hills near El Paso; April. Mountains near Santa Cruz, Sonora; Sept. (915^a.) — All the specimens from about El Paso and westward are said to have purple flowers, and they are purplish in the dried specimens. They are yellow in Gregg's specimens from Monterey.

COCHLOSPERMEÆ.

Amoreuxia Schiedeana, (*Planch. in Hook. Lond. Jour. Bot.* 6. *p.* 140. *t.* 1; non *Gray, Pl. Wright.*): foliis 7 – 9-partitis, segmentis spathulatis; fructu ovoideo-globoso pollicari; seminibus reniformi-curvatis, tegumento externo tenui hispidulo interiori conformi; embryone homotrope incurvo. (Tab. XII. A.) — Euryanthe Schiedeana, *Cham. & Schlecht. in Linnæa*, 5. *p.* 225. Amoreuxia palmatifida, *DC. Prodr.* 2. *p.* 638? (Mexico, *Schiede. Coulter!* (Sonora Alta). New Granada, *Purdie!*) Hills along mountain streams, near Deserted Rancho, in the northern part of Sonora; Sept. (916.) — The specimens are chiefly with ripe fruit; the pods ovoid-globose, barely an inch long, and therefore only half, or less than half, the size of those of Mr. Wright's former specimens (No. 79), figured in *Pl. Wright. t.* 3, *B.* A more remarkable difference is found in the seeds, which in the present specimens are strongly incurved-reniform, with the fragile exterior integument conformed to the inner one, and beset with minute hispid hairs; and the embryo is simply curved, without any double flexure. The lobes of the leaves, also, are more numerous and narrower. I cannot doubt that these specimens belong to the species characterized by Chamisso and Schlechtendal (who describe the pod as scarcely an inch long and ovoid-globose, the seeds as reniform? and the leaves as 5 – 9-parted). It is certainly the plant recently figured by Planchon.

A. Wrightii: foliis 5-partitis vel sub-7-partitis, segmentis obovatis basi cuneatis; fructu oblongo-ovoideo (sæpius bipollicari); seminibus obovoideis haud incurvis, tegumento externo laxo arilliformi glabro; embryone biarcuato. — A. Scheideana, *Gray, Pl. Wright. p.* 29. *t.* 3. *B.*, excl. syn. — Hills at Painted Caves, near the San

Pedro River (the same locality as that of No. 79); July: with young fruit. (1340.) — These few specimens were gathered on the return journey, the past summer. They resemble those of the collection of 1849, the unripe pods being an inch and a half long; except that one or two stunted plants have ripened pods which are no larger than those of the preceding species; but their seeds, &c. exactly resemble those figured in *Plantæ Wrightianæ.* — The specimens gathered by Dr. Gregg and Dr. Edwards near Monterey appear to belong to this species, but they show no fruit.

ANACARDIACEÆ.

Rhus virens, *Lindh. in Pl. Lindh.* 2. *p.* 159. Along mountain streams on the Sonoita, Sonora; Sept. — The specimens, mostly in fruit, resemble the Texan plant.* (31)

R. (Lobadium) microphylla, *Engelm. in Pl. Wright. p.* 40. Stony hills near El Paso, March, in flower, before leafing; also on the San Pedro, Western Texas, July, in fruit, and with smaller leaves than in the specimens of 1849. (1341.)

R. trilobata, *Nutt. in Torr. & Gray, Fl.* 1. *p.* 219; *Gray, Pl. Wright. p.* 31. Pebbly banks of the San Pedro, Western Texas; May, in fruit. (917.) — Var. molliter tomentosa. Organ Mountains, New Mexico, and toward the Limpio; April, June: in fruit. (1342.)

VITACEÆ.

Vitis rupestris, *Scheele in Linnæa,* 21. *p.* 591; *Gray, Pl. Lindh.* 2. *p.* 165. Pebbly bottom of the San Pedro; and hill-sides on the Limpio; May, June: in fruit. (918.) — "Climbing 8 – 10 feet."

V. æstivalis, *Michx. Fl.* 2. *p.* 230; var. Banks of Elm Creek, Texas; climbing on trees, July; in fruit. — The same form as Lindheimer's No. 359.

V. æstivalis, *Michx.*; var.? foliis parvis. Ravine at Santa Cruz, Sonora; Sept.; in fruit. (919.) "Climbing on small trees 8 or 10 feet high."

RHAMNACEÆ.

Zizyphus lycioides, *Gray, Pl. Lindh.* 2. *p.* 168, *& Pl. Wright. p.* 32. Between Western Texas and El Paso, the locality not recorded; in flower. (920.) Also on rocky hills opposite Frontera, New Mexico, March, in young fruit; and May, with ripe fruit. (1343.)

Z. obtusifolia, *Gray, Gen. Ill.* 2. *t.* 163, *& Pl. Lindh. l. c.* Prairies between the Rio Grande, New Mexico, and Eagle Spring; June. (1344.)

Condalia spathulata, *Gray, Pl. Wright. p.* 32. Sides of a cañon on the San Pedro, Sonora; Sept. (921.) — "Shrub 4 – 6-feet high, much branched; flowers greenish-yellow." Leaves 2 or 3 lines long, crowded and fascicled.

C. obovata, *Hook.*, var. foliis parvis. Hills of the San Pedro and Zoquete Creek, Western Texas; July. (1345.)

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* Pistacia Mexicana, *H. B. K.* was gathered by the late Dr. Gregg, near Monterey and Rinconada.

Microrhamnus ericoides, *Gray, Pl. Wright. p.* 34. Prairies between Howard's Creek and Live Oak Creek, Western Texas, May; also between the Limpio and the Rio Grande. (922.) — The specimens are loaded with the fruit, which has been described in the account of Mr. Wright's former collection.

Karwinskia Humboldtiana, *Zucc.; Gray, Pl. Wright. p.* 32. Limestone hills in the Big Bend of the San Pedro River, Western Texas; July. (1346.)

Adolphia infesta, *Meisner; Gray, Pl. Wright. l. c.* Mountain valleys between the Limpio and the Rio Grande, June; in flower. (923.)

Frangula Californica, *Gray, Gen. Ill.* 2. *p.* 178; var. tomentella. Rhamnus tomentellus, *Benth. Pl. Hartw. p.* 303. Ojo de Gavilan, beyond the copper mines, New Mexico; Aug. (924.) "Shrub 4 to 6 feet high." — In these specimens the leaves are glabrous and bright green above, even when young, but are clothed beneath, as are the branchlets, with a fine and soft whitish pubescence. They are mostly serrulate, as they also are in my specimen of Hartweg's No. 1686. From Fremont's Californian collection, Dr. Torrey has specimens still more tomentose, even on both sides of the leaves; but I think that all these are merely varieties of Hooker's Rhamnus oleifolius, which was earlier published by Eschscholtz, under the name of Rhamnus Californicus.

Sageretia Michauxii, *Brongn.; Gray, Gen. Ill.* 2. *t.* 166. Rocky banks, east of Santa Cruz, Sonora; Sept. (925.) — The specimens, which are sparingly in flower, appear to agree in all respects with those from Florida. I am not aware that this species has been yet observed at any intermediate station.

Ceanothus Greggii (sp. nov.): divaricato-ramosissimus; ramulis tomentoso-puberulis; foliis confertis ellipticis oblongisve integerrimis coriaceis crassis uninerviis glabellis subtus leviter penninerviis primum tomentulosis (3 – 5 lin. longis); pedicellis pubescentibus (demum glabratis) flore albo paullo longioribus. — (Battle-field of Buena Vista, *Gregg;* in flower.) Side of mountains near Frontera, New Mexico, July; in fruit. — Shrub 2 – 5 feet high, with very rigid branches. Pedicels shorter than the leaves. Flowers small. Fruit about 2 lines in diameter. — I have only poor specimens of this species. It bears considerable resemblance to small-leaved forms of C. cuneatus, *Nutt.;* but the leaves are not narrowed towards the base, and the pinnate veins underneath are obscure.

CELASTRACEÆ.

Mortonia sempervirens, *Gray, Pl. Wright. p.* 35. *t.* 4. Stony prairies, San Felipe Creek, Western Texas; May. (926.) — The flower, in all the species, is articulated with the peduncle, just above the pair of bracts.

M. scabrella (sp. nov.): fruticosa; foliis obovatis ovalibusve margine incrassatis undique ramulisque hispidulo-scabris; petalis et disco margine fere integerrimis; calyce fructu ovali-oblongo dimidio breviore; stylo breviusculo. — Mountain-sides, near the San Pedro, Sonora, Sept.; in flower and fruit. Mountains near El Paso, April; in flower. (927.) — Stems 2 to 4 feet high, much branched. Leaves 3 or 4 lines long, and 2 or nearly 3 lines wide, very obtuse, seldom mucronulate, very thick and with a thickened margin, rough with a short and close pubescence which consists of very short bristly hairs from a papillose base. The flowers, &c. are nearly as in M. sempervirens; except that the petals are not erose-denticulate, but are minutely ciliolate under a lens, with a pubescence much like that of the leaves, though finer and apparently glandular, and which also covers their surface; the disk is not lobed nor manifestly repand; the fruit is rather shorter, and so is the style. The oblong cotyledons are, perhaps, less fleshy.

SCHÆFFERIA CUNEIFOLIA, *Gray, Pl. Wright. p.* 35. Stony prairies, from the San Felipe to the San Pedro, Western Texas; May, in fruit. (928.)

PACHYSTIMA MYRSINITES, *Raf.; Gray, Pl. Fendl. p.* 29. Mountain-sides, at the copper mines, New Mexico; Oct., in flower. (929.)

GLOSSOPETALON, *Nov. Gen.*

Flores hermaphroditi. Calyx profunde 5-fidus, persistens; lobis ovatis obtusis æstivatione imbricatis. Petala 5, lineari-ligulata, calyce multo longiora, sub margine undulato-10-crenulato glanduloso disci tenuis perigyni inserta, marcescentia. Stamina 10, sinubus disci inserta, calyce breviora: filamenta subulata: antheræ didymæ, muticæ, filamento æquilongæ, loculis longitudinaliter dehiscentibus. Ovarium liberum, ovoideum, obliquum, apice acutum, stigmate sessili orbiculato depresso simplicissimo coronatum, uniloculare. Ovula 2, e basi fere loculi erecta, subcollateralia, anatropa. Fructus oblique ovoideus vel oblongus, apiculatus, coriaceus, multistriatus, 1–2-spermus, tandem bivalvis? Semen obovoideum, compressiusculum, hilo exciso arillo parvo carunculæformi bilobo munitum; testa lævi crustaceo. (Embryo haud visus.) — Frutex 2–4-pedalis, ramosissimus, glaber; ramis viridibus striatis spinescentibus; foliis alternis oblongo-linearibus spathulatisve integerrimis parvis, vel ramulorum florif. ad squamulas subulatas minimas reductis; stipulis nullis; floribus albis secus ramulos sparsis axillaribus breviter pedunculatis.

GLOSSOPETALON SPINESCENS. (TAB. XII. *B.*) — In a mountain ravine near Frontera, New Mexico; April. (1347.) — The general aspect of this singular shrub is so nearly that of Adolphia infesta, that it was mistaken for it by Mr. Wright, and therefore was only sparingly gathered, in flower, with a few immature fruits. It is to be hoped that the botanists of the Boundary Commission will yet obtain it in greater abundance and perfection. The detailed character given above will show that it belongs to an entirely new genus, and probably to the order Celastraceæ. To this order I venture to refer it, notwithstanding two decidedly exceptional characters, namely, the stamens of twice the number of the petals, and the strictly simple pistil. The fruit, which is probably dehiscent at maturity, is a good deal like one of the separate carpels of Euscaphis staphylæoides, although many times smaller (only two lines in length); and the seed resembles that of Staphylæa, except that it is appendaged at the hilum with a small, rather fleshy arillus. In these respects, therefore, (but in no other,) our plant appears to be intermediate between Celastraceæ and Staphyleaceæ. Ordinarily only one seed matures; but in a specimen gathered by Dr. Bigelow, two full-grown (superposed) seeds are occasionally found. In none have I found a perfect embryo. In the few seeds examined, there is a bulge of the crustaceous testa on each side, which corresponds to a defined empty cavity underneath, separated by a firm partition from the central portion, which contains the scanty albumen and forming embryo. The leaves are 2 to 4 lines long, with a tapering base, dilated at the insertion; on many of the branches they are reduced to this base, the lamina being abortive. The narrow, strap-shaped petals are nearly 3 lines in length, about thrice the length of the very obtuse and slightly scarious-margined lobes of the calyx; they are inserted by a narrow base.

SAPINDACEÆ.

UNGNADIA SPECIOSA, *Endl.; Gray, Pl. Wright. p.* 38. Ravines of the Organ Mountains, New Mexico; April, in flower. — This has not before been found west of the Rio Nueces.

MALPIGHIACEÆ.

GALPHIMIA LINIFOLIA, *Gray, Gen. Ill.* 2. *p.* 196. *t.* 173, *& Pl. Wright. p.* 36. From the Sabinal to the San Pedro, Texas; May. (930.)

ASPICARPA HYSSOPIFOLIA, *Gray, Pl. Lindh.* 2. *p.* 167, *& Pl. Wright. p.* 36. Stony prairies, Chicon Creek, Western Texas, May; and on the San Pedro, July. (931.)

A. LONGIPES, *Gray, Pl. Wright. p.* 37. Crevices of rocks, Wild Rose Pass, valley of the Limpio; June. Also, mountain valleys near Santa Cruz, Sonora; Sept. (932.) — In the later specimens, both carpels of the apetalous flowers often ripen.

JANUSIA GRACILIS, *Gray, Pl. Wright. p.* 37. Mountains, Guadalupe Pass, and heads of the Aqua Prieta, east of Santa Cruz, Sonora; Sept. (933.) — Some petaliferous flowers occur, which accord with the generic character. The petals are yellow, with a rounded and nearly entire lamina, raised on a slender claw. Fertile stamens 2 or 3.

POLYGALACEÆ.

POLYGALA ALBA, *Nutt.; Gray, Pl. Wright. p.* 38. Valley of Live Oak Creek, Texas; May. — A specimen or two of an abbreviated form occurs in the collection from Sonora.

P. SCOPARIA, *H. B. K.*, var. MULTICAULIS, *Gray, Pl. Wright. p.* 38. Mountains, Guadalupe Pass, Sonora; Oct. Also mountains near El Paso; April. (934.) Stems rather taller and more branched above than in No. 100 of Wright's former collection.

P. MACRADENIA, *Gray, Pl. Wright. l. c.* Hills of Live Oak Creek, Texas; May. Stony hills near El Paso; March, May. (1348.)

P. LINDHEIMERI, *Gray, Pl. Lindh.* 2. *p.* 110, *& Pl. Wright. l. c.* Hill-sides on the Limpio, San Pedro, and Comanche Spring, Western Texas; May, June. (1349.)

P. OVATIFOLIA, *Gray, Pl. Wright. p.* 39. Elm Creek, Western Texas, to the San Pedro; May. (935.)

P. PUBERULA, *Gray, Pl. Wright. p.* 40. Stony ridges, and in the alluvion at their base, on the Pecos; May. (936.) Also near the copper mines, New Mexico; July.

P. (MONNINOPSIS) HEMIPTEROCARPA (sp. nov.): glabra, perennis; caulibus gracilibus ramisque strictis striato-angulatis foliosis; foliis subulato-linearibus uninerviis alternis; racemo virgato multifloro; floribus albis mox pendulis; carina cristata alis obovatis paullo breviore; capsula oblonga membranacea, loculo postico dupliciter alato inter laminas dehiscente, antico paullo minore indehiscente semen fere ecarunculatum includente. — Stony hills of the Sonoita, near Deserted Rancho, on the borders of Sonora. (937.) — Root perpendicular, perennial. Stems erect, sparingly branched above (the branches strict), slender, strongly striate-angled, 12 to 20 inches high. Leaves mostly erect, rather rigid, somewhat crowded, alternate, sessile; acute, seldom half a line wide; the lower cauline about 3 lines long; the upper and those of the branches 7 to 10 lines long. Raceme rather densely flowered, 2 or 3 inches in length. Bracts subulate-lanceolate, about the length of the short pedicels, very caducous. Calyx white or whitish; the three small sepals ovate, rather obtuse; the wings obovate, slightly unguiculate, rather longer than the corolla, one third shorter than the capsule. Lateral petals obovate, as long as the entire and hooded keel, not including its crest; which is nearly as in P. scoparia. Stamens 8, in two sets. Stigma cucullate and bilabiate; the short upper lip truncate and tipped with a small tuft of bearded hairs; the lower lip decurved, also somewhat truncate and ciliolate. Ovary equal-sided, two-celled, with a single ovule in each cell. Capsule thin and membranaceous, glabrous, oblong, obscurely emarginate, $2\frac{1}{2}$ lines in length, somewhat gibbous; the cell next the axis being rather larger than the other, and appendaged with a crenulate, bilamellar wing, reaching from near its base to the apex, dehiscent between the two laminæ; the valves then becoming outspread, so that they form, as it were, a broad, obcordate wing, surrounding the anterior cell (the one next the carina), which is indehiscent, conformed to the seed, and not at all winged or margined on its back. Seed cylindrical, hirsute with spreading hairs; that of the posterior cell with a conspicuous caruncle, the linear lobes of which are fully half the length of the seed; that of the indehiscent and anterior cell with the caruncle obsolete or rudimentary. — In general aspect, this species is intermediate between P. alba and P. scoparia; but taller than either. From the singular structure of the fruit, it must constitute a marked new section of the genus.

MONNINA WRIGHTII (sp. nov.): annua, fere glabra; caule gracili; foliis lanceolatis linearibusve subsessilibus; floribus parvis mox deflexis hexandris; fructu sicco complanato inæqualiter ovato acutissime marginato uniloculari, faciebus uninerviis venulosis. — Crevices of rocks, mountain-sides, near the copper mines, New Mexico; Aug., in flower; Oct., in fruit. (938.) — The flowering specimens are about a span, the slender fruitful ones a foot or more, in height. Leaves one or two inches long, 2 to 4 lines wide; the very lowest small and obovate; the others acute. Raceme one or two inches long; sometimes there are other and very short racemes in the axils. Bracts minute. Flowers a line and a half long, greenish-white tinged with purple. Stamens 3 in each phalanx: filaments glabrous. Fruit deflexed, flattened, scarcely 2 lines long, with a sharp and wing-like margin, and the sides carinately one-nerved, minutely puberulent under a lens. Seed smooth, not carunculate.

KRAMERIACEÆ.

Krameria parvifolia, *Benth.*; *Gray, Pl. Wright. p.* 41. Valleys, between the Limpio and the Rio Grande, June; and on sand-hills near Frontera, July. (939.) — A dwarf variety of this, with more numerous glandular setæ on the peduncles, &c., was gathered between San Pedro and Santa Cruz, Sonora; Sept. (940.) — A few specimens of the var. ramosissima (no. 105), were gathered on the San Felipe.

K. canescens, *Gray, l. c.* Hills of Live Oak Creek, Texas; May. Also between Eagle Springs and the Rio Grande. (941.)

K. lanceolata, *Torr. in Ann. Lyc. New York*, 2. *p.* 168; verging to K. secundiflora, *DC.* Stony prairies of Chicon Creek, W. Texas. Near El Paso; May. (942.)

LEGUMINOSÆ.

Vicia pulchella, *H. B. K. Nov. Gen. & Sp.* 6. *p.* 499. *t.* 583 ? var. foliolis majoribus obtusis cuspidato-mucronatis; stipulis plerisque integerrimis. — Pine hills between the copper mines and the Mimbres, New Mexico; Oct., with mature fruit. (943.) (San Antonio de las Alanzanes, Mexico, *Gregg;* in flower and fruit.) — Dr. Gregg's specimen accords with Kunth's figure, except that most of the leaflets are obtuse. Ours, which are autumnal specimens, with ripe fruit, have rather larger and more rigid leaflets, and linear and entire stipules. The numerous pods are an inch in length, nearly 3 lines wide, somewhat falcate, acute, 6 – 10-seeded.

V. exigua, *Nutt. in Torr. & Gray, Fl.* 1. *p.* 272. Ravines near El Paso; also on the banks of Lake Santa Maria, Chihuahua; April. (1350.) — The earlier peduncles are very short, while some of the later ones are almost as long as the leaf.

Lathyrus polymorphus, *Nutt.; Torr. & Gray, Fl. l. c.*; *Gray, Pl. Fendl. p.* 30. Along streams, between the San Pedro and Santa Cruz, Sonora; Sept. (944.)

L. linearis, *Nutt. in Torr. & Gray, l. c.* (L. dissitifolius, *Nutt. l. c.*); var. stipulis minimis subulatis integerrimis. Stony hills at the copper mines, New Mexico; Aug. (945.) — Flowers in the dried specimens blue-purple, especially towards the tip, three fourths of an inch long.

L. palustris, *Linn.* ? var. foliolis elongatis angustis gramineis; stipulis minoribus, nunc semisagitatis, nunc subulatis integris. — Stony hills near the copper mines, and along Coppermine Creek; Aug. (946.) — I cannot distinguish this from American forms of L. palustris; and in some specimens the stipules are of the same shape as in that species. The flowers were purple, but have mostly lost their color in drying, as in Fendler's No. 116.

Cicer arietinum, *Linn.* New Mexico or Sonora (the locality not recorded); doubtless introduced.

Phaseolus retusus, *Benth. Pl. Hartw. p.* 11; *Gray, Pl. Wright. p.* 43. Valley of the Limpio; June. Sandy banks of the Mimbres, and near the copper mines, New Mexico; Aug. (947.) — "Prostrate. Root very large, 2 feet long, 5 inches thick at the crown, rather ligneous, astringent."

P. acutifolius, *Gray, Pl. Wright. p.* 43. Sides of the Chiricahui Mountains, Sonora; Sept. (948.) — The root is annual; the flowers purple or purplish.

P. ACUTIFOLIUS; var. foliolis majoribus ovatis acuminatis; legumine majore (3-pollicari). — Valleys of Sonora; Sept. (949.)

P. ACUTIFOLIUS, var. TENUIFOLIUS: gracilis; foliolis lanceolatis e basi pl. m. dilatata hinc interdum sublobata seu lineari-lanceolatis; calycis labio superiore brevi mucronulato; seminibus lævibus nitidis. — Mountain-sides near the copper mines, New Mexico, and in Guadalupe Pass; Oct. (950.) — Leaflets 2 or 3 inches long, mostly 2 or 3 lines wide at the base, thence tapering to an acute point. Cultivated specimens, however, show broader leaflets, more or less dilated or obsoletely sublobed, or gibbous at the base, and passing into the type of P. acutifolius.

P. ANGUSTISSIMUS (sp. nov.): perennis, lævigatus; caulibus diffusis seu volubilibus gracillimis; stipulis ovatis minimis; foliolis angustissime linearibus obtusiusculis aveniis pedunculo paucifloro filiformi brevioribus; calyce breviter campanulato, labio superiore latissimo subemarginato dentibus inferioris ovatis obtusis æquilongo; legumine oblongo falcato plano 3-4-spermo; seminibus leviter rugulosis. — Stony hill-sides, at the crossing of the Rio Grande above Doña Ana, New Mexico, July; and between San Pedro and Santa Cruz, Sonora, Sept. (951.) — Stems numerous, from a firm perennial root, slender and very smooth. Leaflets 1½ to 2 inches long, a line or a line and a half wide, thickish, smooth, very minutely puberulent beneath under a lens, longer than the petiole. Peduncle 2-5 inches long, loosely 2-5-flowered. Pedicels longer than the calyx. Flowers 4 lines long; the ample vexillum and wings purple; the spirally coiled keel yellow. Pod 8-10 lines long, 3 lines wide, narrowed towards the base, nearly glabrous; the flat valves thin.

P. WRIGHTII, *Gray, Pl. Wright. p.* 43. Sides of stony hills, at the copper mines, New Mexico; Aug. (952.) — The specimens are much better than those of 1849, and in fine flowering state. It is a perennial, with a lignescent fusiform root, of a foot or so in length, and an inch in diameter. Stems either prostrate or twining. The leaflets vary considerably in shape; the lateral lobes sometimes little shorter than the middle one, and in the larger leaflets themselves inclined to be two-lobed at the apex. The racemes are rather many-flowered, with the bracts inclined to be persistent. The young legumes are destitute of the conspicuous style which tips those of the former, chiefly fruiting specimens. The character of the species therefore needs some modification.

P. MACROPOIDES (sp. nov. § Microcochle): radice tuberosa; caulibus decumbentibus retrorsum hirsutis; stipulis ovatis acuminatis nervosis; foliolis ovalibus vel subrhombeis integris aut supra medium subunilobatis fol. infimum obtusis superiorum acutis pilis appressis utrinque hirto-pubescentibus; pedunculis folio pluries longioribus puberulis plurifloris; calycibus subsessilibus villosulis, laciniis conformibus lanceolato-subulatis; alis corollæ rotundatis vexillo duplo majoribus; legumine deflexo lineari-falcato puberulo subcompresso 4-6-spermo. — Stony hills at the copper mines, New Mexico; Aug. (953.) — Stems beginning to flower when only 2 inches long, extending a foot or two in length, decumbent or diffusely spreading, flexuose, thickly villous-hirsute; the pubescence of the petioles similar, but not reversed. Stipules 2 or 3 lines long, rather scarious. Petioles 12-18 lines long. Stipels subulate, longer than the petiolules. Leaflets 9-18 lines in length, mucronate, sometimes obscurely angled on one side nearer the summit than the base, sometimes with the angle produced into a broad tooth or lobe of 2 or 3 lines in length. Peduncles 4 to 9 inches long, minutely and retrorsely pubescent, floriferous above the middle. Bracts minute, subulate, caducous. Calyx 2 lines long, equally 5-cleft, or more deeply so between the upper lobes, the narrow and very acute lobes longer than the tube. Vexillum and wings purple in the dried specimens, rotund; the former emarginate, 3 or 4 lines, the latter 6 lines long. Carina yellowish, shorter than the vexillum, strongly circinate-incurved, as in P. heterophyllus. Ovary minutely pubescent, 6-ovuled. Legume 8 or 9 lines long, 2 lines wide, torulose, incurved. Seeds reniform, smooth. — This species is evidently allied to P. macropus, *Benth.* (which I have not seen), the fruit of which is unknown. It appears to differ in the shape of the leaflets, as well as in their pubescence, which is nearly similar on both surfaces, in the hirsute stems, and in the shape and pubescence of the calyx. It should likewise be compared with P. parviflorus, *Schlecht.*

P. ROTUNDIFOLIUS (sp. nov. § Microcochle): perennis, radice tuberosa? caulibus decumbentibus cum pedunculis plurifloris folio ter longioribus retrorsum villosis; stipulis ovatis nervosis; foliolis rotundatis integris utrinque appresso-pubescentibus; calycibus brevissime pedicellatis villosis, laciniis conformibus subulatis; vexillo alis orbiculatis subæquali; legumine deflexo lineari-falcato subcompresso 4–6-spermo villosissimo. — Valley west of the Chiricahui Mountains, Sonora, in sandy soil; Sept. (954.) — Closely related to the preceding species; but the peduncles are hairy like the diffuse and slender stems; the leaflets are orbicular or rounded-obovate, often retuse (8 to 12 lines in diameter); the flowers perhaps rather smaller; the calyx more hairy; the wings not so large in proportion to the deeply emarginate vexillum, and the ovary and pod very villous. The blossoms have dried of a purple color; but according to Mr. Wright's memorandum, they are "deep red."

RHYNCHOSIA TEXANA, *Torr. & Gray*, & var. ANGUSTIFOLIA, *Gray, Pl. Wright. p.* 44. Prairies of Turkey Creek, Western Texas, and on the Limpio; May, June. (955.)

GALACTIA TEPHRODES (sp. nov.): subvolubilis; caulibus foliisque pube minuta appressissima sericeo-canescentibus; foliolis 3 oblongo-linearibus utrinque obtusissimis mucronulatis; pedunculis plurifloris; calycis lobis oblongis obtusis, postico integro; legumine recto canescente. — Mountain-sides, near Conde's Camp, between the copper mines and Chiricahui Mountains, New Mexico; Aug. (956.) — Stems numerous from a lignescent root, 2 or 3 feet long, whitened or cinereous with the very fine and close pubescence. Leaflets less canescent above than beneath, 10 to 16 lines long, those of the lower leaves narrowly oblong, of the upper linear, not narrowed at the base, often slightly retuse at both ends; the terminal one rather remote from the others. Lower peduncles longer, the upper shorter, than the leaves. Calyx minutely cinereous-pubescent, nearly 3 lines long. Pod 10 to 14 lines long, 2 lines wide, 4–7-seeded. — The pubescence is nearly as in G. heterophylla, *Gray, Pl. Lindh.*

COLOGANIA PULCHELLA, *H. B. K. Nov. Gen. & Sp.* 6. *p.* 413; *Gray, Pl. Wright. p.* 44. Mountain-sides, from Smith's Run to Providence Creek, between the Limpio and the Rio Grande; June. (957.) — The leaflets are pale and cinereous (not bright green) above as well as beneath, otherwise the specimens accord pretty well with Kunth's description of C. pulchella, of which it is probably only a variety.

C. ANGUSTIFOLIA, *H. B. K. l. c.; Gray, l. c.* (cum char.). Rocky sides of mountains, at the head of the Limpio; June, in flower and fruit. (958.) — Except that the flowers are not so large, our specimens admirably agree with Kunth's description, especially in the particulars in which they differ from the narrow-leaved species described below. The linear and *falcate* legumes (which were before unknown in the genus) I have already described. Plants raised from seeds taken from these specimens have the earlier leaves broadly oval (7 or 8 lines long); the succeeding ones oblong, and finally linear.

C. LONGIFOLIA (sp. nov.): volubilis; foliolis ternis nunc 4 – 5-nis linearibus elongatis acutis vel obtusis longe mucronatis supra glaberrimis subtus reticulatis cum caulibus calycibusque (pedicello longioribus) pilis brevissimis appressis strigulosis; legumine lineari subcompresso recto. — Variat, α. foliolis rigidiusculis 1½ – 3 unc. longis 2 – 3 lin. latis. β. foliolis membranaceis glabellis sæpius lato-linearibus 3 unc. longis 5 – 8 lin. latis, costa in mucronem sesquilineam longum producta. δ. caule simplici suberecto ½-sesquipedali; foliolis angustissime linearibus 3 – 4 unc. longis 2 lin. latis. — Hills near the copper mines, New Mexico, climbing on low bushes; Aug.? (α. 959. β. 960.) δ. Mountain ravines, on the Sonoita, near Deserted Rancho, Sonora; Sept., in fruit. (961.) — The leaves in all the forms are some of them often 4 – 5-foliolate, the additional leaflets being inserted with the lateral pair, which are separated from the terminal one by a rhachis of 2 or 3 lines in length. The minute, strigose pubescence of the stem is retrorse. Stipules lanceolate-subulate, strigulose, very small. Pedicels 2 or 3 lines long, shorter than the calyx; which in α. and β. is 5 or 6 lines long, its upper lobe entire. Corolla violet-purple in the dried specimens. Legume about 2 inches long, 2 lines wide, straight, less compressed than in C. angustifolia, cinereous with the same fine pubescence as the calyx, 10 – 14-seeded. Seeds subrotund, with a small hilum, not strophiolate. The root is said to be thickened or somewhat tuberous, and to penetrate very deeply. — In the glabrous upper surface of the leaves, and in the fine and close pubescence of the calyx, this plant agrees with the character of C. intermedia, *H. B. K.*, with which it should be compared, notwithstanding the size and shape of the leaflets, which in C. intermedia are said to be only from 9 to 14 lines long. The straight pod, and the characters furnished by the pubescence, sufficiently distinguish it from C. angustifolia.

PETERIA SCOPARIA, *Gray, Pl. Wright. p.* 50. Stony hills near Smith's Run and Eagle Springs, between the Limpio and the Rio Grande; June. Also between Frontera and the Mimbres, New Mexico; July. (962.) — A well-marked, new genus. The flowers are tinged with purple.

CRACCA EDWARDSII (sp. nov.): molliter sericeo-pubescens; caulibus herbaceis e basi suffrutescente; stipulis setaceis; foliolis 4 – 8-jugis membranaceis ellipticis mucronatis reticulato-venosis concoloribus; racemis laxifloris; bracteis setaceo-subulatis persistentibus; vexillo purpureo; carina flavida; legumine elongato 13 –

19-spermo inter semina interstincto. — (Near Monterey, Mexico, *Dr. Edwards*, in herb. Torr.) Valleys in the mountains between the San Pedro and the Sonoita, Sonora (in flower and with young fruit); and on hills between the Barbocomori and Santa Cruz (with ripe pods); Sept. (963.) — Plant a foot high. Lobes of the calyx elongated-subulate, a little shorter than the corolla. Legumes 2 to 2½ inches long, a line and a half wide, straight or nearly so, perfectly glabrous in the specimens from the first-named locality; but minutely pubescent in the others. The latter likewise have smaller leaflets (only half an inch in length) with a shorter mucro, and the soft silky pubescence deciduous, except that of the margins and midrib. — The genus is a yet unpublished one of Mr. Bentham, equivalent to Tephrosia § Craccoides of De Candolle, including also T. Caribæa, &c.; but is nearer Coursetia than Tephrosia.

TEPHROSIA LEUCANTHA, *H. B. K. Nov. Gen. & Sp.* 6. *p.* 460. *t.* 577? Hill-sides between Barbocomori and Santa Cruz, Sonora; Sept. (964.) — The stems are one or two feet high, from a thickened root, terminated by a single short raceme, which bears ripe pods only. The foliage, calyx, &c. accord very well with Kunth's figure. The legumes are widely spreading, 1½ to 2 inches long, 2 lines wide, linear, straight or nearly so, pointed, thickly clothed with a yellowish villous tomentum. Seeds 8 – 10. The flowers not seen.

T. LEIOCARPA (sp. nov.): caule erecto subsimplici petiolis calycibusque pube minuta appressa cinereis; stipulis setaceis; foliolis 8 – 10-jugis cum impari lineari-oblongis obtusis mucronatis supra glabris subtus sericeis juventute canescentibus; pedunculis terminalibus et in axillis summis brevibus plurifloris; calycis lobis triangulari-subulatis tubo longioribus; legumine recto 10 – 14-spermo glaberrimo. — On the Sonoita, near Deserted Rancho, Sonora; Sept. (965.) — Stems a foot or more in height, rather slender, very numerous from a thick and lignescent root. Leaflets 9 to 14 lines long, 3 lines wide, often a little narrowed towards the base, thickish. Peduncle, with the rhachis, 2 to 4 inches long. Flowers not seen. Unripe pods linear, about 2 inches long, 3 lines wide, flat, very smooth, not stipitate.

T. TENELLA (sp. nov.): annua, glabella; caule ramoso spithamæo; stipulis setaceis; foliolis 1 – 3-jugis cum impari linearibus obtusis membranaceis subtus (sub lente) parce striguloso-puberulis; racemis oppositifoliis paucifloris; pedicellis plerisque geminis paribus remotis, infimis ad basim pedunculo folio bracteatis; laciniis calycis subulatis, posticis ad medium coalitis; staminibus diadelphis; legumine rectiusculo glabello. — Pebbly beds of mountain torrents, near the San Pedro, Sonora; Sept. (966.) — Stems slender, branched from the base, erect or diffuse. Leaflets mostly 3 or 5, an inch long, 1½ to 3 lines wide, mucronate, thin, green both sides, the straight veins not conspicuous underneath. Peduncle 3 – 5 inches long, with an internode of one to three inches between the lowest pair of pedicels (which are as if axillary) and the next pair. Bracts minute. Flowers 3 lines long, simple. Legume spreading, 12 to 16 lines long, 2 lines wide, 6 – 7-seeded.

GLYCIRRHIZA LEPIDOTA, *Nutt.; Gray, Pl. Wright. p.* 50. G. glutinosa, *Nutt.* Along the Rio Grande above and below El Paso. Also on the Mimbres; July, Aug. (967.)

INDIGOFERA SPHÆROCARPA (sp. nov.): frutescens, glabella; caulibus erectis foliosissimis; foliis pinnatis; petioli brevi; foliolis 7–8-jugis cum impari lineari-oblongis basi attenuatis apice obtusis retusisve supra glabris; racemis multifloris; leguminibus ovato-globosis monospermis. — Bed of a mountain torrent, near Santa Cruz, Sonora; Sept. (968.) — "Stems numerous from the root, 2–4 feet high." Leaflets 5 or 6 lines long, 2 lines wide, very glabrous above, minutely and sparsely strigulose and cinereous underneath. Stipules none, or a mere gland. Flowers not seen; the specimens being entirely in fruit. Fruiting racemes 4 or 5 inches long, bearing a great number of globular and nearly glabrous legumes, which are only a line and a half long, on pedicels of nearly the same length, tardily if at all dehiscent. Seed entirely solitary, globose.

I. LEPTOSEPALA, *Nutt.;* var. cinereo-argentata. Pebbly bed of a tributary of the Pecos; June.

PRORALEA CUSPIDATA, *Pursh. Fl.* 2. *p.* 741. Rocky hills of the San Pedro, Western Texas; May.

P. ESCULENTA, *Pursh.* Stony hills of the San Felipe, Western Texas; June.

P. FLORIBUNDA, *Nutt. in Torr. & Gray, Fl.* 1. *p.* 300. Sides of mountains at the copper mines, New Mexico; Oct. (969.)

EYSENHARDTIA AMORPHOIDES, *H. B. K.*? var. ORTHOCARPA: leguminibus rectis 6–7 lin. longis pendulis; foliolis majoribus 6–8 lin. longis crebre glanduloso-punctatis. — Mountains at Guadalupe Pass, between San Bernardino, Sonora, and the copper mines, Sept.; in fruit. (980.) — The leaflets are still larger than those of Wright's No. 116, of which the fruit is not known. The legumes are nearly twice as large as those of Lindheimer's No. 374 and Coulter's and Gregg's Mexican specimens, in which they are ascending on the rhachis and falcate-incurved; in the present plant they are linear, straight, and all deflexed. If further specimens do not tend to unite them, the present plant must be distinguished specifically. But Schauer describes the fruit of his Mexican specimens in Aschenborn's collection as lanceolate, a little arcuate at the apex, 7 lines long and 2 lines wide.

DALEA LANATA, *Spreng.; Gray, Pl. Wright. p.* 47. Sandy soil, on the Rio Grande; very common; July. (981.)

D. LACHNOSTACHYS, *Gray, Pl. Wright. p.* 46. Hill-sides, between the Barbocomori and Santa Cruz, Sonora; Sept. (982.) — Root tapering, apparently perennial. Stems 6 to 12 inches high, with spreading branches.

D. NANA, *Torr. in Pl. Fendl. p.* 31. Hills on the Pecos; June. (1351.)

D. POGONATHERA, *Gray, Pl. Fendl. p.* 31, *& Pl. Wright. p.* 48. Stony hills near El Paso, May; and at Comanche Spring, Texas, June. (1352.)

D. LASIATHERA, *Gray, Pl. Wright. p.* 48. Stony prairies, Western Texas; May. Valley of the Limpio; June. (983.)

D. FRUTESCENS; var. spicis pl. m. elongatis densifloris, *Gray, l. c. p.* 46. Rocky hills on the Pecos; June. — Also with short and dense spikes, on Live Oak Creek. (1353.)

D. FORMOSA, *Torr.; Gray, l. c.* Stony prairies on San Felipe Creek; May. Sandy hills on the Rio Grande, New Mexico; March, Oct. (984.)

D. ALOPECUROIDES, *Linn.; Gray, l. c.* Hill-sides at the copper mines, New Mexico; and on the borders of Sonora. (985.)

D. WISLIZENI, *Gray, Pl. Fendl. p.* 32; var. foliolis minus sericeis obtusis supra glabellis subtus tantum cinereo-pilosis (caulibus frutescentibus e basi ramosis). — Mountain ravines near Santa Cruz, Sonora, Sept. (986.) — Except in the points mentioned, the specimens accord with D. Wislizeni. They have the same gland-like setulæ on the calyx-lobes, and the solitary gland near the tip of the petals, the wings excepted. The corolla is bright rose-purple in the specimens. The stems are woody towards the base, erect or ascending, 2 or 3 feet high. Stipules subulate.

D. ARGYRÆA, *Gray, Pl. Wright. p.* 47. On the San Pedro or Devil's River, Western Texas; July.

D. SCOPARIA, *Gray, Pl. Fendl. p.* 32, *& Pl. Wright. p.* 47. Sand-hills near San Elizario, New Mexico; June. (1354.)

D. ALBIFLORA (sp. nov.): cinereo-pubescens; caulibus erectis e radice perenni vix glandulosis; foliis juventis sericeo-canescentibus; foliolis 10–15-jugis cum impari oblongis obtusis supra glabellis subtus parce glanduloso-punctatis; petiolo communi brevissimo; stipulis minimis subulatis; spicis cylindricis densis; calycibus cum bracteis subulatis æquilongis albo-villosis, dentibus subulatis tubo paullo brevioribus; petalis albis æquilongis subconformibus. — Hill-sides on the San Pedro and Barbocomori, Sonora; Sept. (987.) — Stems one or two feet high, simple, or sparingly branched above. Leaves 1–2 inches long. Leaflets crowded, 2 or 3 lines long, more or less pubescent beneath with very fine silky hairs. Spikes silvery-canescent before the flowers expand, one or two inches long, very dense. Bracts caducous. Flowers 3 lines long; the lamina of the pure white petals a line and a half long, of the vexillum round-oval, of the other petals oval-oblong. Anthers yellow, tipped with a gland. Ovary and base of the style villous. — The plant has somewhat the general aspect of D. alopecuroides or of Petalostemon phleoides.

D. ALBIFLORA; var. humilis; foliolis spicisque angustioribus. — On mountains near Santa Cruz; Sept. (988.)

D. LÆVIGATA (sp. nov.): caulibus e radice crassa perenni pluribus erectis striatis foliisque glaberrimis lævibus; foliolis 17–20-jugis cum impari lineari-oblongis subacutis canaliculatis (sesquilineam longis) subtus parce punctatis; spicis cylindraceis densis; bracteis ovatis acuminatissimis parce glandulosis margine præsertim arachnoideo-villosis florem subæquantibus; calyce villosissimo, dentibus triangulari-subulatis tubo brevioribus; petalis pallide flavis subæquilongis. — On the Chiricahui Mountains, and on the Barbocomori, Sonora; Aug., Sept. (989.) — Stems about 2 feet high from a lignescent root, rather strict and slender, more or less branched above, sharply striate-angled, perfectly glabrous and smooth, leafy; the branches sparingly if at all punctate. Stipules minute, subulate. Leaves 1 to 2 inches long, pale green. Leaflets thickish, veinless except the obscure midrib, perfectly glabrous as well as the rhachis, and sparingly punctate underneath. Spikes about an inch long and a quarter of an inch thick, silky-villous. Bracts deciduous only with the fruiting calyx, greenish, 2 lines long. Corolla small; the lamina of the petals a line and a half long; vexillum orbicular; the others oblong. Ovary and base of the style silky-villous.

D. BRACHYSTACHYS (sp. nov.): annua, humilis; caulibus e basi ramosis diffusis foliisque glaberrimis; foliolis 5–11 cuneato-oblongis vel sublinearibus emarginatis subtus rhachique grosse glandulosis; spicis breviter pedunculatis globosis demum oblongis densifloris; bracteis ovatis acuminatis concavis grosse glandulosis margine haud scarioso villoso-ciliatis calyce paullo brevioribus subpersistentibus; calyce sericeo-villosissimo, dentibus setaceo-subulatis tubo sublongioribus corolla flava paullo brevioribus; petalis inæqualibus. — Valleys, in alluvial soil, between the San Pedro and the Sonoita, Sonora; Sept. (990.) — Stems a span high, ascending, slender, sparingly glandular-punctate. Stipules subulate, minute, rather persistent. Leaflets 4 to 6 lines long, much like those of D. pogonathera and D. lasiathera. Spikes 3 lines in diameter, in fruit only twice that length, very densely flowered. Bracts greenish, less boat-shaped than those of the above-mentioned species, and the margins not scarious, but more or less villous-ciliate, otherwise glabrous, or the upper ones villous next the base. Calyx 2 lines long; the teeth very plumose-villous, equalling the small vexillum and the wings. Keel-petals more than twice the size of the others, 2½ lines long, including the claws. Ovary villous with white hairs like those of the calyx.

D. POLYGONOIDES (sp. nov.): annua, humilis; caule ramosissimo gracili foliisque glaberrimis; foliolis 3–9 lato-linearibus emarginatis basi acutis glaucescentibus rariter glanduloso-punctatis; pedunculis gracilibus; spicis oblongis vel cylindricis densifloris; bracteis ovatis seu obovatis acuminatissimis membranaceis grosse-glandulosis villoso-ciliatis calycem æquantibus persistentibus; calyce sericeo-villosissimo, dentibus subulato-setaceis tubo æquilongis; petalis subæquilongis albidis. — Pebbly bed of mountain torrents, near the copper mines, New Mexico; Oct., in fruit. (991.) — Stems a span high, much branched; the branches divergent, slender, sparingly glandular-dotted. Stipules subulate, minute, deciduous. Petiole with the rhachis half an inch long. Leaflets 4 to 6 lines long, a line and a half wide, veinless, apparently a little succulent, livid, the upper surface often purplish; the glands few and rather small. Spikes half an inch to an inch long, 2 to 3 lines thick, dense, livid. Bracts a line and a half long, dotted with a few large glands, wholly persistent, even after the fruited calyces have fallen, glabrous, except the villous margins and sometimes the base; the lowest broadly ovate, the upper obovate and tapering to the base. The specimens are nearly all in fruit; the flowers found at the apex of the spikes bear petals, which are only a line in length, and white or whitish. Legume villous.

D. FILIFORMIS (sp. nov.): annua; caule exili erecto laxe ramoso foliisque glaberrimis; foliolis 3 digitatis (raro 5 pinnatis) filiformibus parce punctatis; pedunculis filiformibus; spicis capitatis demum cylindraceis densifloris; bracteis ovatis acutis carinatis ciliatis vix glandulosis calyce brevioribus caducis; dentibus calycis sericeo-villosissimi subulatis tubo æqualibus; petalis subæquilongis (purpureis vel roseis). — Hill-sides near the copper mines, New Mexico; Aug., in flower; Oct., in fruit. (992.) — The most slender of all the species known to me; the stems from 4 to 10 inches high, at length copiously and paniculately branched; the filiform branches spreading. Stipules minute, setaceous. Leaflets 6 to 12 lines long, usually longer but scarcely thicker than the petiole, channelled on the upper side; when three, manifestly digitate; when five, the additional pair inserted one or two lines lower down. Peduncles one or two inches long. Spike silky-villous, 2 or 3 lines in diameter in flower; in fruit becoming half an inch long. Calyx a line and a half long. Lamina of the petals half a line long; vexillum round-cordate; the wings very oblique, nearly the length of the keel. Ovary villous. — Cultivated, from seeds communicated by Mr. Wright, in the Cambridge Botanic Garden, the much-branched stems attain a foot or more in height.

D. Wrightii, *Gray, Pl. Wright. p.* 49. Stony hills near El Paso; May. (1355.) — "Flowers yellow, turning purplish."

D. Jamesii, *Torr. & Gray, Fl.* 1. *p.* 308; *Gray, Pl. Wright. p.* 49. Stony hills on the Pecos and the Limpio; June. (993.)

D. calycosa (sp. nov.): suffruticulosa, cinereo-puberula; caulibus ramosissimis decumbentibus; foliolis 7 – 14-jugis cum impari obovatis ovalibusve retusis juxta incisuram unipunctatis supra glabris subtus nunc glabratis; spicis breviter pedunculatis oblongis modice densifloris; floribus post anthesin recurvis; bracteis lanceolatis calyce brevioribus caducis; dentibus calycis, obliqui villosi lato-lanceolatis tubo duplo longioribus; petalis albo-purpureis, vexillo reniformi alisque carina dimidio brevioribus. — Hills near the Deserted Rancho, on the San Pedro, Sonora; Sept. (994.) — Stems a span long, slender, from a suffrutescent base. Stipules subulate. Leaflets 2 or 3 lines long, minutely and often sparsely strigose-pubescent underneath. Spikes 1 to 2 inches long, with the flowers contiguous but not compact. Calyx campanulate, oblique, 3 lines long, sparsely villous; the short tube glandular-dotted between the ribs; the lobes remarkably long and large for the genus, greenish, about the length of the vexillum and oblique wings. Keel (2 – 3 lines long) and wings apparently white marked with rose-purple, the vexillum bright purple. Legume orbicular, flat, apparently 2-valved, one-seeded. Ovules 2.[*]

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[*] The species of Dalea described or enumerated in this and the former memoir, and in *Plantæ Fendlerianæ* and *Plantæ Lindheimerianæ*, are so numerous as to render an artificial conspectus convenient. The species may be disposed as follows: —

* *Calyx profunde quinquefidus; lobis lato-lanceolatis subfoliaceis.*	D. calycosa.
* * *Calyx villosissimus, dentibus setaceis vel subulatis.*	
+ Fruticosæ, glabræ, multijugatæ; spicis paucifloris.	D. formosa.
+ + Herbaceæ, glabræ; foliis 5 – 6-jugis; spicis multifloris.	
Perennes. Bracteæ cymbæformes, scarioso-marginatæ, glaberrimæ, persistentes.	
Spica laxiflora, plumosa. Corolla flava. Stamina 9.	D. laxiflora.
Spica densiflora. Corolla purpurea.	
Calycis dentes setacei, plumosissimi, tubo longiores.	D. pogonathera.
Calycis dentes subulati, villosissimi, tubo breviores.	D. lasiathera.
Annui. Bracteæ villoso-ciliatæ, immarginatæ.	
Bracteæ subpersistentes: spica globosa vel oblonga: corolla flava.	D. brachystachys.
Bracteæ persistentes: spica cylindrica: corolla albida.	D. polygonoides.
Bracteæ caducæ: foliola filiformia: corolla purpurea.	D. filiformis.

Petalostemon exile (sp. nov.): annum, glabrum; caule erecto tenui simplici vel simpliciter ramoso; foliolis 3 raro 5 linearibus mucronato-apiculatis parce punctatis, impari lateralibus longiore; spica longe pedunculata cylindrica densa; bracteis ovatis subulato-acuminatis subvillosis floribus paullo brevioribus persistentibus; calyce villosissimo, dentibus setaceo-subulatis tubo æquilongis petala rosea subæquantibus. — Hill-sides, near Santa Cruz, Sonora, Sept.; also near the copper mines, New Mexico, Oct. (995.) — Stems 6 to 14 inches high, very slender. Lateral leaflets 4 to 6 lines, the terminal one 9 – 18 lines in length, a line or less in width, plane, glabrous, or with a few minute hairs. Spike an inch or an inch and a half long in fruit, 3 lines thick; the lowest bracts broader and less subulate-pointed than the upper, and nearly glabrous; the others are arachnoid-villous, especially the margins. Calyx 2 lines long. Petals very small, oval, nearly similar. Stamens 5. — The genus Dalea scarcely occurs east of the Mississippi; and even in Arkansas and Eastern Texas there are ten Petalostemons to five Daleas. But as we proceed westward and southward, the former genus disappears, and the species of the latter largely increase. Petalostemon violaceum, the most widely diffused species, alone reaches the northern frontiers of New Mexico; the present species comes from farther south, and is the only one known to occur in Mexico.

Melilotus parviflora, *Desf.* Near El Paso, and in Sonora; naturalized. (996.)

Medicago sativa, *Linn.* Fields, El Paso and San Elisario; introduced. (1356.)

Trifolium involucratum, *Willd.; Benth. Pl. Hartw. no.* 54; *Gray, Pl. Fendl. p.* 33. Valley of the Sierra de los Animos, New Mexico, on the borders of springs; Oct. (997.) — The margin of the leaflets is fringed with as long setaceous teeth as in any form of T. fimbriatum, *Lindl.;* but the calyx-teeth are much longer than the tube.

+ + + Herbaceæ, glabræ; foliis multijugis; spicis elongatis alopecuroideis.	
Perennis, microphylla: corolla flava.	D. lævigata.
Annua: corolla alba roseo tincta.	D. alopecuroides.
+ + + + Herbaceæ vel suffruticosæ, pubescentes, tomentosæ, vel sericeæ.	
Spica densissima, recta; floribus albis.	D. albiflora.
Spica densissima, crassa, villosissima; floribus flavis vel purpureis.	
Foliola appresso-sericea, 2 – 4-juga, raro pinnato-trifoliolata.	
Spica longissime pedunculata, e caule virgato erecto.	D. aurea.
Spica breviter pedunculata: caules ramosi: foliola oblonga obtusa.	D. nana.
Spica sessilis: foliola lanceolata acuta.	D. Wrightii.
Foliola appresso-sericea, tria, digitata!	D. Jamesii.
Foliola laxe villosa, 4 – 8-juga.	
Glanduloso-tuberculata: spica crassa, bracteis pubescentibus.	D. lachnostachys.
Villoso-canescens, humilis; bracteis villosissimis.	D. mollis.
Spica laxiuscula; corolla pulchre purpurea.	
Tomentosa; caulibus diffusis ramosissimis.	D. lanata.
Sericea; caulibus strictis simpliciusculis.	D. Wislizeni.
* * * *Calyx pubescens vel canescens, dentibus brevibus.* (*Frutescentes.*)	
Foliola 7 – 13, sericeo-argentea: corolla flavo-purpurea.	D. argyræa.
Foliola 5 – 7, glabella: corolla alba.	D. leucostachys.
Foliola 1 – 3, linearia: corolla pulchre violacea.	D. scoparia.
* * * * *Calyx nisi ad margines glaber; dentibus brevibus.*	D. frutescens.

HOSACKIA PURSHIANA, *Benth.; Torr. & Gray, Fl.* 1. *p.* 327. Valley of Sonoita Creek, Sonora; Sept. (998.)

H. PUBERULA, *Benth. Pl. Hartw. p.* 305; *Gray, Pl. Wright. p.* 50. Hills near the San Pedro, Sonora; Sept. Also on Rock Creek, towards the head of the Limpio; June. (999.)

H. PUBERULA; var. nana, diffusa, magis cinerea; foliolis brevioribus et latioribus. — Organ Mountains, northeast of El Paso, April; in flower and fruit. (1357.)

H. WRIGHTII (sp. nov.): sericeo-pubescens; caulibus e radice perenni erectis rigidis ramosissimis; stipulis nigris glandulæformibus; petiolo vix ullo; foliolis 3 – 5 linearibus imisve oblongis; pedunculis unifloris folio brevioribus, superioribus brevissimis; bractea unifoliolata lineari; calycis dentibus setaceo-subulatis tubo oblongo-campanulato æquilongis corolla (flava purpureo tincta) multo brevioribus. — Stony hills at the copper mines, New Mexico, Aug. (1000.) — Plant about a foot high, herbaceous; the young branches and foliage silvery-pubescent, when old glabrate. Petioles of the lower leaves barely half a line long; the upper almost none. Leaflets 5 to 7 lines long, half a line wide, or towards the base of the stem a line and a half wide. Lower peduncles 6 to 8 lines long, the upper one to three lines long, rarely 2-flowered. Calyx minutely silky-pubescent, the tube 2 to 2½ lines long. Corolla 6 lines long, not counting the included claws. Legume over an inch long, straight, acute, clothed with the same pubescence as the calyx. — Allied to the preceding species; from which it is distinguished by its more upright and bushy growth, its nearly sessile leaflets, short peduncles, and larger flowers. From H. rigida, *Benth.*, its narrow leaflets, shorter calyx-tube with longer teeth, and short peduncles seem abundantly to distinguish it.

ASTRAGALUS MOLLISSIMUS, *Torr.; Gray, Pl. Wright. p.* 53. Prairies of Escondido Creek, between the Pecos and the Limpio; June, in fruit.

A. BIGELOVII (sp. nov.): multiceps, acaulescens, undique sericeo-villosissimus; stipulis triangulari-subulatis basi petioli adnatis; foliolis 9 – 12-jugis ovalibus seu obovato-oblongis; pedunculis scapiformibus folia superantibus, fructiferis recurvis vel humifusis; spica cylindrica confertiflora; tubo calycis villosissimi cylindrico dentibus subulatis triplo longiore; corolla purpurea; leguminibus ovatis apiculato-acuminatis incurvis lanosissimis complete bilocularibus suturis parum sulcatis, loculis polyspermis. — On the Organ Mountains northeast of El Paso; April 30th; chiefly in fruit. (1358.) — Plant a span or more in height from a perennial lignescent root; the leaves, scapes, &c. thickly clothed with a canescent wool, which is rather villous than silky. Leaflets 5 to 8 lines in length. Spike 3 or 4 inches long, many-flowered, compact. Flowers nearly sessile, 7 – 8 lines long. Legumes half an inch long, very densely woolly, as well as the scariously marcescent calyx, coriaceous, the cross-section orbicular. — Manifestly allied to A. mollissimus, and with the same habit; but more strictly acaulescent, more villous, and especially distinguished by its turgid and very woolly (instead of glabrous) pods, the sutures not introflexed. I dedicate it to Dr. J. M. Bigelow, the physician of the Boundary Commission, to whom, with Mr. Wright, we are indebted for the discovery of this striking species.

A. NUTTALLIANUS, *DC.*; var. pube strigulosa subcanescens; leguminibus arcuatis nunc striguloso-hispidulis (ut in var. trichocarpo) nunc cum ovario glabris. — Stony hills near El Paso; March, April. (1359.) — Plant about as large as Texan and Arkansan specimens, but much more strigose-cinereous.

A. NUTTALLIANUS, var. pumilus, etc. (*Gray, Pl. Wright. p.* 52); 2 – 3-pollicaris, cæt. ut in præcedente; leguminibus sæpe cinereo-hispidulis. — Dry hills on the Rio Blanco, Piedra Pinta, and Pecos. Also at El Paso, and on Lake Gusman, Chihuahua; April, May. (1001.) Some specimens with shorter pods pass into the next.

A. NUTTALLIANUS? var. pumilus, strigoso-canescens; caulibus diffusis; leguminibus brevioribus. — Near Lake Santa Maria, Chihuahua; April. (1360.)*

A. VACCARUM (sp. nov.): perennis, strigoso-puberulus; caulibus adscendentibus gracilibus; stipulis lanceolatis basi imo petiolo adnatis; foliolis 5 – 8-jugis subsparsis lato-linearibus obtusis mucronulatis supra glabris; pedunculis folio longioribus; racemis multifloris densis; floribus brevissime pedicellatis mox deflexis; calycis dentibus subulatis tubo campanulato subæquilongis; corolla incurva ochroleuca; leguminibus haud stipitatis lineari-oblongis arcuatis puberulis dorso latosulcatis (sectione transversali obcordata) bilocularibus oligospermis. — Ojo de Vaca, west of the copper mines, New Mexico; Aug. (1002.) — Stems 1 or 2 feet high, branched from the base, weak. Leaflets 6 – 8 lines long, a line and a half or less in width, the pairs rather distant. Peduncles 3 – 5, the spicate raceme one to two, inches in length. Bracts subulate, persistent, as long as the calyx. Flowers only 2 lines long, smaller than those of A. gracilis, *Nutt.*, and the corolla more incurved. Legume 4 lines long, a line in diameter; the cells 3 – 5-seeded. — This species resembles A. Hartwegi, *Benth.*, more than any other known to me; but the incurved flowers are only half as large, the stipules and leaflets are narrower, the latter fewer, the racemes much shorter, &c.

A. HUMISTRATUS (sp. nov.): subsericeus; caulibus e basi suffrutescente ramosissimis prostratis foliosis; stipulis inter se coalitis oppositifoliis; petiolo brevissimo; foliolis 7 – 9-jugis lineari-oblongis acutis supra glabratis subtus pilis laxe appressis hirsuto-sericeis; pedunculis folium æquantibus; racemo cylindraceo subdensifloro;

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* The following species was found near the copper mines by Dr. Bigelow, early in the season. It is allied to Astragalus leptopus, *Benth. ined.*, in Coulter's Mexican collection; but has fewer and retuse leaflets, smaller flowers, and smaller pods, which are obtuse at each end and not stipitate.

ASTRAGALUS COBRENSIS (sp. nov.): striguloso-puberulus; caule humili gracili; stipulis triangulatis a petiolo modice elongato liberis; foliolis 7 – 10-jugis obovatis oblongisve retusis supra glabris; pedunculo folium superante plurifloro; calyce pedicello paullo longiore, dentibus subulatis tubo æquilongis; leguminibus haud stipitatis oblongis utrinque obtusis obcompressis glabellis dorso late concavis bilocularibus polyspermis, sutura ventrali extus prominente. — Near the *Cobre* or copper mines (Santa Rita del Cobre), New Mexico; April or May. — Stems slender, a span high; the root wanting in the specimen. Petioles half an inch or more in length to the lowest pinnæ. Leaflets 3 lines long, rather fleshy, strigulose-pubescent when young, the upper surface early glabrate and the lower at length nearly so. Racemes loose, 10 – 15-flowered; the flowers spreading, barely 3 lines long. Bracts shorter than the pedicels. Calyx pubescent with dark hairs. Corolla purple. Legumes pendulous, half an inch long, 2 to 2½ lines wide (contrary to the partition); the ventral suture salient; the dorsal face broadly concave; the partition extending quite to the ventral suture, but not coherent with it.

calycis villosi dentibus lineari-subulatis tubo campanulato æquilongis; corollæ violaceæ carina apice angustata producta; leguminibus lineari-oblongis arcuatis pubentibus sutura dorsali introflexa semibilocularibus polyspermis. — Pebbly bed of a stream, and on hills under pine-trees, near the copper mines, New Mexico; Aug. (1003.) — Root perpendicular, penetrating deeply. Stems a foot or more in length, canescently strigose-hirsute, leafy throughout. Stipules scarious, 3 lines long, hairy, ovate-lanceolate, acuminate; the upper united to the middle, the lower almost to their summits. Leaves 1½ to 2 inches long. Leaflets 5 or 6 lines long, one or two lines wide, linear or oblong, silky-hirsute (like the peduncles, &c.), and when young silky-canescent, especially beneath, with rather long and loosely-appressed straight hairs. Raceme one or two inches long, 12 – 20-flowered; the flowers at first contiguous, but not densely crowded, 4 or 5 lines long, showy. Bracts rather per sistent, lanceolate-subulate, villous, as long as the calyx. Calyx-tube a line and a half long. Corolla deep violet in the dried specimens; the keel tapering and somewhat prolonged at the apex, but obtuse. Ovules about 24. Immature legume 8 or 9 lines long, with a broad and shallow dorsal groove. Mature pods not seen.

A. (Phaca) Fendleri: parce striguloso-puberulus; caule adscendente gracili flexuoso e radice perenni; stipulis triangulato-subulatis; foliolis 7 – 11-jugis oblongo-linearibus oblongisve obtusis nunc retusis (6 – 10 lin. longis); racemis longe pedunculatis patentibus 10 – 20-floris laxis folium superantibus; floribus purpureis patulis; calycis nigro-puberuli dentibus subulatis tubo brevioribus; leguminibus oblongis inflatis chartaceis glabellis apiculatis facie ventrali rectiusculis dorsali gibbosis polyspermis. — Phaca Fendleri, *Gray*, *Pl. Fendl. p.* 36. (1004.) — Pine hills, from the Mimbres to the copper mines, New Mexico; Oct. — The specimens are entirely in ripe fruit, and, except that they are larger, correspond with Fendler's No. 158 (which was likewise gathered in fruit), having shorter and broader, oblong or elliptical, and often emarginate leaflets; but some specimens make a near approach to Fendler's No. 157 (flowering specimens), to which they may be safely united. The ripe pods are from 9 to 12 lines long, and 4 or 5 in diameter. — I defer to Mr. Bentham in uniting Phaca to the vast genus Astragalus.

A. (Phaca) Sonoræ (sp. nov.): argenteo-sericeus, humilis; caulibus decumbentibus gracilibus e radice perenni; stipulis ovatis scariosis, inferioribus inter se folio opposito pl. m. coalitis; foliolis 7 – 8-jugis anguste oblongis lanceolatisve acutatis utrinque sericeis; pedunculis folio mox longioribus; racemo 8 – 12-floro; calycis sericei dentibus setaceis tubo æquilongis; corolla purpurea; leguminibus lunatis turgidis chartaceis puberulis, suturis haud introflexis. — Mountain valleys, between the San Pedro and the Sonoita, Sonora; Sept. (1005.) — Stems a span or more in length, leafy. Leaflets 3 or 4 lines long, canescently silky and silvery beneath, and hardly less so above. Peduncle 2 or 3 inches long. Flowers 4 to 5 lines long, approximate. Bracts a little longer than the very short pedicels. Legumes barely half an inch long, 2 to 3 lines in diameter, falcate-incurved, pointed, turgid, but somewhat compressed, the upper suture acute. Seeds 8 or 10. — This bears some resemblance to A. (Phaca) gracilentus, No. 159 of Fendler's collection: but that is not silky, and has larger and nearly straight pods, smaller and paler flowers, &c.

A. (PHACA) TRIFLORUS. Phaca triflora, *DC. Astrag. t.* 1. *& Prodr.* 2. *p.* 273. P. Candolliana, *H. B. K. Nov. Gen. & Sp.* 6. *p.* 495. *t.* 586. Sandy banks of the Rio Grande below El Paso; April, June. (1361.) (Chihuahua, &c., *Gregg.* Mexico, *Coulter.*) — The specimens accord very well with the figures and description of Humboldt's plant, from the volcano of Jorullo, which is in Mexico, not in Peru, as is inadvertently stated by De Candolle. The name is scarcely allowable; since the peduncle is sometimes as much as 15-flowered. But there is a recent Astragalus Candollianus. Phaca annua, *Geyer*, apparently differs from this only in its incurved and sharp-pointed pods. Should they be joined, this later name might be adopted. — There are two forms in the collection of 1852, one dwarf or early, with narrow leaflets, the root plainly annual; the other (also from near Lake Gusman) larger and smoother, with obovate leaflets.

A. (PHACA) TEPHRODES (sp. nov.): villoso-canescens; caule brevi e radice bienni? stipulis triangulatis scariosis fere liberis; foliolis 7 – 9-jugis oblongis seu ovalibus supra nunc subglabratis; pedunculo plurifloro foliis brevioribus; floribus subsessilibus; calycis tomentosi dentibus subulatis tubo campanulato dimidio brevioribus; "corolla purpurea"; leguminibus oblongis acuto-apiculatis arcuatis turgidis cinereis chartaceis, suturis haud introflexis extus prominulis. — Plains at the base of the Organ Mountains, New Mexico; April. — The single specimen gathered is not in good condition, although it has both flowers and full-grown fruit. The stems are only an inch long; but they doubtless elongate later in the season; they are clothed, like the whole plant, with a cinereous rather hirsute-villous pubescence. Leaves crowded; the leaflets 4 or 5 lines long. Spike an inch long, rather dense. Flowers 4 or 5 lines in length: the corolla pale, but said to be purple in Mr. Wright's notes. Legume half an inch long, not stipitate, the transverse section probably orbicular or nearly so, and 2 lines broad in the living plant.

OXYTROPIS LAMBERTI, *Pursh*, var. *Gray, Pl. Wright. p.* 53. Sides of ravines between the Mimbres and the copper mines, New Mexico, Oct.; in flower and fruit. (1006.) — Specimens even larger than Wright's No. 180; the scapes sometimes a foot high; and the leaflets 3 or 4 lines wide.

CHÆTOCALYX WISLIZENI (*Gray, Pl. Wright. p.* 51): adde char.: lomento moniliformi, 3 – 4-articulato, articulis oblongis compressis faciebus trinervatis. — Open prairies on branches of the San Pedro, east of Santa Cruz, Sonora, Sept.; in fruit. (1007.) — A few scattered and minute bristles may be seen on the fruiting calyx. Legumes an inch to an inch and a half in length, subsessile in the calyx, more or less contracted at the joints, which break apart at maturity; the articles are 3 or 4, oval or oblong, truncate at the ends, compressed, somewhat margined, one-seeded, 3 – 5 lines long, coriaceous, puberulent, their faces marked with three subparallel nerves, and minutely reticulated between the nerves; the terminal joint wholly, or its sterile apex, somewhat foliaceous and dilated. The cells are lined with woolly hairs. Seeds oblong, compressed. Radicle incurved. — The fruit of the original species of Chætocalyx, *DC.* is still unknown. That of the present plant is truly Hedysareous. It differs from the character of Rhadinocarpus, *Vogel*, (which Mr.

Bentham has suggested to me as probably a Chætocalyx,) chiefly in the distinctly flattened loment.

ZORNIA RETICULATA, *Smith; DC. Prodr.* 2. *p.* 316. Hills near Santa Cruz, Sonora; Sept. (1008.) — The short aculei of the loment are not smooth, but retrorsely scabrous under a lens.

DESMODIUM GRAMINEUM (sp. nov.): glaberrimum; caulibus e radice perenni erectis gracillimis; stipulis minutis subulatis; foliis omnibus unifoliolatis; foliolo anguste lineari prælongo subtus nervato-venoso; racemis paniculatis; lomento 3 – 4-articulato breviter stipitato, articulis ovalibus. — Crevices of rocks on the Sonoita, near Deserted Rancho, Sonora; Sept. (1009.) — A unifoliolate species of the section Chalarium, remarkable for its long and slender grass-like leaflets. These are from three to five or even six inches long, and from one to two, the very largest three, lines wide, membranaceous in texture, and perfectly glabrous, like the rest of the plant. The slender stems are one or two feet high. Bracts minute. Flowers small. Articles of the loment 1½ to 2 lines long, much deeper separated than in D. linearifolium.

D. ANNUUM (sp. nov.): pilosulum; caule tenello e radice annua erecto subsimplici; stipulis stipellisque setaceis cum petiolo longiusculo semper unifoliolato pilosis; foliolo ovali membranaceo concolore ciliato; racemis paucifloris; lomento deflexo vix stipitato, articulis 4 – 5 orbiculatis ciliolatis medio adnexis. — Sonora, with the preceding and the succeeding. (1009ª.) — Stem 4 to 8 inches high, slender, erect or ascending, 8 – 10-leaved. Leaves all unifoliolate, very thin, oval or ovate-oblong, or the uppermost narrowly oblong, obtuse at both ends, not in the least inclined to be cordate; the larger 1½ inches long and an inch wide; the earlier ones much smaller; the primordial ones opposite. Pedicels 3 to 5 lines long. Flower 2 lines long. Loments 6 to 9 lines long, straight; the articles when young inclined to twist or infold, glabrate, or at length glabrous, except the margin. — This is wholly distinct from the perennial D. Wrightii, and is a smaller and more delicate plant.

D. EXIGUUM (sp. nov.): annuum, puberulum; caule tenello erecto ramoso; stipulis bracteisque setaceis; foliis plerisque unifoliolatis, foliolo inferiorum deltoideo vel rhomboideo summorum lineari, paucis intermediis nunc trifoliolatis foliolis linearibus vel lanceolatis; racemis filiformibus; lomento 2 – 3-articulato longiuscule stipitato, articulis rhombeis scabris. — Mountain ravines, on the Sonoita, Sonora; Sept. (1010.) — Stem a span high, diffusely branched. Leaflets hirtello-puberulent, not reticulated, obtuse; those of the lowest leaves 3 to 5 lines long and 5 or 6 broad; the next longer, and often deltoid-oblong, passing into lanceolate; the upper, and those of the trifoliolate leaves when present, 6 – 9 lines long, and one or two wide. Pedicels capillary, an inch long. Flowers very small. Stipe of the loment three or four times the length of the calyx. Articles 1½ to 2 lines long. — From D. Wislizeni this well-marked species (which belongs, like all the following, to the section Chalarium) differs in its annual root, its less reticulated and smaller leaflets, the lower strikingly dilated, and in the scabrous articles of the loment, which are more contracted at each end.

D. Neo-Mexicanum, *Gray, Pl. Wright. p.* 53; var. glabellum, caulibus erectis diffuse ramosis; foliolis membranaceis vix reticulatis obtusis; lomento glabello. — Borders of thickets, on stony hills along the Coppermine Creek, New Mexico; also in Sonora, along with the preceding species; Aug., Sept. (1011.) — Stems a span to a foot long from an annual root, erect, with the basal branches diffusely spreading. Leaves thinner and less rigid than in Wright's No. 141; the primordial ones unifoliolate, and oblong or oval. Corolla purple, two lines long. Articles of the loment almost glabrous, plane. — Cultivated in the Cambridge Botanic Garden, this forms a much-branched plant, three or four feet high, the branches very slender.

D. Bigelovii (sp. nov.): annuum; caulibus gracilibus procumbentibus elongatis angulatis scabrido-pubescentibus; foliis trifoliolatis; stipulis bracteisque setaceo-subulatis persistentibus; foliolis lato-lanceolatis obtusis membranaceis laxe venosis ciliatis glabellis; racemis laxifloris; lomento vix stipitato 3 – 4-articulato, articulis rhomboideis undulato-torquatis subpuberulis. — Valley on the San Pedro, Sonora; Sept. (1012.) — From the wild specimens I was inclined to consider this a doubtful variety of D. Neo-Mexicanum; but in cultivation it proves to be distinct. The slender stems trail on the ground, and attain several feet in length; the leaflets are much broader (3 to 5 lines wide by 12 to 18 in length), blunter, and thinner; and the articles of the pod are thin, undulate, and twisted; while in D. Neo-Mexicanum they are perfectly plane.

D. batocaulon (sp. nov.): caule elongato procumbente pilis tortis uncinatis aspero-hirto adhæsivo; stipulis e basi lata subulato-aristatis fuscis deciduis; foliis trifoliolatis; foliolis oblongo-lanceolatis acutis utrinque strigoso-hirsutis cinereis laxe venosis; racemis terminalibus et axillaribus laxifloris; bracteis subulatis caducis; lomento breviter stipitato, 5 – 7-articulato, articulis rotundatis lævibus. — Stony banks of small streams, on the San Pedro, Sonora; Sept. (1013.) — Stems numerous from the perennial root, trailing, striate-angled, three feet or more in length, rough with the rigid and adhesive pubescence. Leaflets 12 to 18 inches long, and 3 to 6 lines wide, somewhat canescent underneath. Axillary racemes few-flowered; the terminal many-flowered. Flower purple, 3 or 4 lines in length, as long as the pedicel. Articles of the fruit 2½ lines long, nearly smooth and glabrous.

D. Sonoræ (sp. nov.): caule erecto ramoso pilis apice uncinatis confertis aspero-hirto adhæsivo; stipulis bracteisque parvis e basi lata subulatis fuscis deciduis; foliis trifoliolatis; foliolis oblongis seu lanceolato-oblongis obtusis membranaceis laxe venosis utrinque parce pilosulis subtus pallidis; racemis terminalibus elongatis; lomentis deflexis brevissime stipitatis, articulis 7 – 8 rotundatis scabro-hirtis. — Low valley, on the Sonoita near Deserted Rancho, Sonora; Sept. (1014.) — Stem tall, the base not seen, clothed with a stiff adhesive pubescence much like that of the foregoing species; from which, besides its upright growth, it is distinguished by its less hairy, or glabrate, thinner and larger (1½ – 2½ inches long and 8 – 10 lines wide), obtuse leaflets, and the hirsute-scabrous articles of the loment. The latter are only a line and a half in diameter. It should be compared with D. Aparines, *DC.*

D. Grahami (sp. nov.): caulibus e radice perenni ramosis procumbentibus ramisque gracilibus glabellis; stipulis subulato-acuminatis fuscis persistentibus; foliis trifoliolatis; foliolis ovato-rotundis sæpe retusis membranaceis minute pubescentibus subtus pallidis; racemis plerisque terminalibus demum prælongis sparsifloris; bracteis ovatis acuminatis striatis calyceque primum hispidis deciduis; lomento substipitato deflexo, articulis 4 – 5 ovalibus inæquilateris pubero-scabris. — On mountains, near the copper mines, New Mexico; Aug. (1015.) — Stems much branched from the root, procumbent or decumbent, angled, leafy. Stipules rather small, soon deflexed. Petioles short; the lower little longer, the upper much shorter, than the rhachis, which is half an inch long. Leaflets 12 to 18 lines long by 8 to 14 wide, bright green above, clothed with a fine appressed pubescence which is shorter and sparse underneath. The principal terminal raceme becomes, with its peduncle, a foot and a half long. Flowers in the bud imbricated with the broad bracts (which are 2 – 3 lines long), but are soon sparse. Pedicels 3 or 4 lines long, roughish-pubescent. Corolla purple, 3 or 4 lines long. Loment straight, slightly sinuate on the upper side, deeply lobed on the lower; the articles therefore inequilateral, 3 lines long. — A fine species, the aspect of the foliage much like that of D. Dillenii; from which the rounded leaflets, decumbent habit, larger bracts, and simple prolonged racemes, at once distinguish it. I dedicate the plant to Colonel Graham, to whose staff Mr. Wright was attached when this collection was made.

D. psilocarpum (sp. nov.): scabro-pubescens; caule e basi suffrutescente erecto; stipulis ex ovato longe subulatis striatis persistentibus; foliis trifoliolatis; foliolis rhombeo-ovatis oblongisve obtusis reticulatis glabratis marginibus venisque subtus hirtellis; racemis terminalibus paniculatis multifloris; bracteis stipulis conformibus caducis; lomentis patentibus, articulis 4 – 5 medio adnexis ovalibus subæquilateris glaberrimis (nisi margine ciliolatis) membranaceis semine multo majoribus. — On detritus of a mountain ravine, near Santa Cruz, Sonora; Sept. (1016.) — Stem 2 or 3 feet high, rigid, roughish with a fine hooked pubescence and some hirsute hairs. Stipules conspicuous, 4 – 5 lines long, green. Stipels setaceous, longer than the petiolules. Leaflets chartaceous, one or two inches long, or sometimes smaller, of nearly the same hue both sides, reticulated underneath, mucronate. The flowering racemes are probably rather dense; the fructiferous ones are often nearly a foot long, and bear a large number of pods. The late flowers at the summit of the spent racemes are small, only two lines long; the calyx-teeth subulate. Pedicels half an inch long. Loment slightly stipitate, smooth and glabrous even when young, except a fine pubescence on the margins; the articles four lines long, thin, appearing broadly winged around the contained seed. — This species is related to D. canescens; from which it is distinguished by its smaller and blunter leaflets, of nearly the same hue both sides, by the absence of villosity on the inflorescence, &c., and by the smooth loments, the two sutures of which are equally constricted. It should be compared with D. stipulaceum, *DC.*

D. cinerascens (sp. nov.): decumbens e radice perenni, pube molle appressa cinereum; stipulis lineari-subulatis fuscis deciduis; foliis trifoliolatis; foliolis elliptico-oblongis obtusis parallele penninerviis utrinque sericeo-pubescentibus pallidis subtus canescentibus; racemis ad apicem caulis paniculatis multifloris; bracteis subulatis caducis; lomentis adscendentibus breviter stipitatis, articulis 6–8 ovalibus inaequilateris puberulis. — Hills, between Barbocomori and Santa Cruz, Sonora; Sept. (1017.) — "Stems 2 to 4 feet long, procumbent." Stipules two lines long. Petioles an inch or less in length, longer than the rhachis. Leaflets 1½ to 2 inches long, 7 to 12 lines wide, very obtuse at both ends, cinereous with a very soft pubescence; the straight primary veins, five or six on each side, very prominent underneath (in the manner of D. Canadense and D. cajanifolium); the veinlets reticulated. Flowers purple, smaller than in D. Canadense. Loment more deeply constricted on the under than the upper side; the articles 2½ lines long. — This species bears some resemblance to D. strobilaceum: which has very short petioles, much larger flowers and bracts, and a lax pubescence; and D. cajanifolium, which has much longer oblong-lanceolate leaflets, green and smooth above, &c.: the form of the pod, as well as of the leaflets, is different from that of D. incanum; and the procumbent or decumbent mode of growth is different from all these species.

Crotalaria lupulina, *DC. Prodr.* 2. *p.* 133. Valleys in the Chiricahui Mountains, Sonora; Sept. (1018.)

C. sagittalis, *Linn.* Hill-sides, near Santa Cruz, Sonora; Sept. (1019.)

Lupinus Mexicanus, *Lagasca, Nov. Gen. & Sp. p.* 22; *Bot. Reg. t.* 457. Mountains near the copper mines, New Mexico (July, in flower, *Dr. J. M. Bigelow*), Oct.; in fruit. (1020.) — "Ascending, about two feet high. Spike in fruit often more than a foot long." — The flowering specimen is small, only a foot high, and villous-hirsute, except the upper face of the leaves. Those in fruit, from the same locality later in the season, are much less hairy. Root perennial. Leaflets 8 to 10, from one to 2½ inches long. Flowers pretty large, blue or purple. Bractlets minute. Upper lip of the calyx acutely emarginate-2-cleft at the apex, the lower 3-denticulate or entire. Carina ciliate-bearded along the upper part, more so than in L. Ehrenbergii. Legume strigose-pubescent, an inch and a half long, 4 or 5 lines wide, flat; 4–5-seeded. — Our plant accords so well with the figure in the Botanical Register (made from specimens raised from seeds communicated by Lagasca to Mr. Lambert) that I cannot think it different. The leaflets, to be sure, are said to be only from 5 to 7 in the original character; but they are 7, 8, and even 9 in the plant figured; nor is the calyx represented as with the upper lip much if at all more cleft than in our specimens, which, in this respect, agree with the closely allied L. Ehrenbergii.

L. pusillus, *Pursh, Fl.* 2. *p.* 468; *Torr. & Gray, Fl.* 1. *p.* 374; var. leguminibus brevioribus (fere semipollicaribus) ovalibus. — Sandy ridges on the Rio Grande opposite Frontera, March, in flower; and plains at the base of the Organ Mountains, May, with fruit. (1362.)

Sophora sericea, *Nutt.; Gray, Pl. Wright. p.* 54. On the Limpio, June; in fruit. Near San Elisario and Lake Santa Maria, April; in flower. (1021.)

Hoffmanseggia Jamesii, *Torr. & Gray, Fl.* 1. *p.* 393; *Gray, Pl. Wright. p.* 54. Valley of the Pecos, in stony prairies; June. Prairies from the Mimbres to the copper mines, New Mexico; July. (1022.) "Root a large woody tuber."

H. BRACHYCARPA, *Gray, Pl. Wright. p.* 55. High rocky (limestone) prairies of Elm Creek, Turkey Creek, and the San Pedro, Western Texas, May; mostly in fruit. (1023.)

H. OXYCARPA, *Benth. in Pl. Wright. l. c.* Stony prairies of Piedra Pinta Creek, May; and on the San Pedro, June. (1024.)

H. STRICTA, *Benth. in Pl. Wright. p.* 56. Valley of the Pecos, in alluvial soil, June. (1025.)

H. STRICTA, var. DEMISSA, *Pl. Wright. l. c.* Valley of the Rio Grande below Doña Ana, and at El Paso; April, July. (1026.) — It passes manifestly into the taller form.

H. DREPANOCARPA, *Gray, Pl. Wright. p.* 58. Stony prairies, valley of the Pecos; June. Sandy hills near El Paso and Doña Ana, New Mexico; May. (1027.) — "Flowers sweet-scented." — A plant raised from the seed is glaucous; and the weak scapes are decumbent, or prostrate in fruit.

CERCIDIUM TEXANUM, *Gray, Pl. Wright. p.* 58. Stony prairies of the Piedra Pinta, &c., Western Texas; May. (1028.)

CASSIA RŒMERIANA, *Scheele; Gray, Pl. Wright. p.* 59. Stony prairies, Zoquete Creek, Texas; May. (1029.)

C. BAUHINIOIDES, *Gray, Pl. Lindh.* 2. *p.* 180, *& Pl. Wright. l. c.* Valleys, near Eagle Springs, between the Limpio and the Rio Grande; June. Also on sandy ridges, west of the Chiricahui Mountains, Sonora; Sept. (1030.)

C. PUMILIO, *Gray, l. c.* Along the San Pedro and Pecos, Western Texas; May. (1031.)

C. LEPTOCARPA (*Benth. in Linnæa,* 22. *p.* 528): glabra, herbacea; caule erecto (2–3-pedali); petioli basiglanduloso; foliolis 4–6-jugis ovato-lanceolatis acuminatis; racemis brevibus paniculatis, infimis folio brevioribus; floribus aureis; legumine attenuato-lineari prælongo compresso marginato recurvato! (Cæt. fere C. occidentalis.) — Pebbly bed of mountain streamlets, near the San Pedro, Sonora; Sept. (1032.) — The gland at the base of the petiole is oblong and acute. The leaflets are smaller than is usual in C. occidentalis (from one to barely two inches in length), and the flowers in the dried specimens are much deeper-colored. But the principal character is furnished by the pods, which (even when very immature) are eight inches long, and only a line and a half wide, tapering upwards, and arcuate-recurved, as in C. obtusifolia. Ripe seeds not seen; their longer diameter lengthwise in the pod. — From the character this must be the C. leptocarpa, which was gathered in Brazil.

C. (CHAMÆSENNA) WISLIZENI, *Gray, Pl. Wright. p.* 60: adde char.: ramis spinescentibus; legumine lineari plano vernicoso, valvis chartaceis. — Heads of the Agua Prieta, Sonora; Oct. (1033.) — "A much-branched and spreading shrub, 4 to 6 feet high." Leaflets often three pairs, 2 or 3 lines long, thickish. Legumes 4 or 5 inches long, 3 lines wide, very flat and thin, obtuse or apiculate, somewhat stipitate, many-seeded; the surface appearing as if covered with a shining varnish. It belongs to the section Chamæsenna.

C. (CHAMÆCRISTA) WRIGHTII (sp. nov.): glabra, humilis; caulibus assurgentibus plurimis e radice crassa perenni; stipulis subulatis; foliolis 4–7-jugis lineari-ellipticis mucronulatis; glandula clavuliformi stipitata infra par infimum; pedicellis axillaribus subsolitariis folium subæquantibus; sepalis membranaceis acutis subcoloratis haud striatis, minoribus lanceolatis, majoribus ovatis; legumine acutato vel apiculato. — Hill-sides, on the Sonoita, near Deserted Rancho, Sonora; Sept. (1034.) — Root very thick and rather ligneous, sending up numerous stems 6 or 8 inches high. Petiolar gland small, raised on a slender setiform stalk, nearly as broad as itself. Leaves an inch long; the leaflets 3 or 4 lines long, much fewer and less inequilateral than those of C. Chamæcrista; the pedicels longer in proportion. Flowers showy; the sepals 3 or 4 lines long, often reddish, shorter than the bright yellow petals. Pod glabrous or nearly so, an inch and a half long, often abruptly pointed at both ends, 8 – 10-seeded.

ALGAROBIA GLANDULOSA, *Torr. & Gray, Fl.* 1. *p.* 399; *Pl. Wright. p.* 60. On the Rio Grande, near San Elizario; May.

STROMBOCARPA PUBESCENS, *Gray, Pl. Wright. p.* 60. Prosopis (Strombocarpa) pubescens, *Benth.* P. (Strombocarpa) Emoryi, *Torr. in Emory, Rep. p.* 139. Valley of the Rio Grande, below and above El Paso; June, July. (1035.)

DESMANTHUS VELUTINUS, *Scheele in Linnæa*, 21. *p.* 456. Rocky hills, valley of the Pecos; and Elm Creek, Western Texas; June. (1036.) — Probably a variety of the next.

D. JAMESII, *Torr. & Gray, Fl.* 1. *p.* 402, & var. *Gray, Pl. Wright. p.* 63. Prairies, on the Mimbres, New Mexico; July.

MIMOSA FRAGRANS, *Gray, Pl. Lindh.* 2. *p.* 182, *& Pl. Wright. p.* 61. Prairies on the San Pedro, Western Texas (in fruit); May. (1037.)

M. BOREALIS, *Gray, Pl. Fendl. p.* 39. Rocky hills, valley of the Pecos (in fruit); June. (1038.)

M. LINDHEIMERI, *Gray, Pl. Lindh.* 2. *p.* 181.? var. pinnis 3-jugis (nunc 1 – 2-jugis in ramulos floridos); foliolis 5 – 7-jugis; leguminibus rectiusculis margine aculeis crebris uncinatis horridis. — Prairies at the head of the Los Moros, Western Texas, July; in flower and fruit. (1363.) — "A low and spreading or procumbent bush, 1 to 4 feet high. Flowers light purple." — Apparently only a form of M. Lindheimeri, with the pinnæ and leaflets reduced more or less, and the margins of the pod excessively armed.

M. BIUNCIFERA, *Benth.; Gray, Pl. Wright. p.* 61. Between El Paso and Western Texas, 1832; in flower. (1364.)

M. BIUNCIFERA, var. glabrescens. — Hills on the Sonoita, Sonora, Sept.; in fruit. (1039.) — "Procumbent, branched from the root, the branches 2 to 3 feet long." — M. Lindheimeri too closely approaches this form.

M. FLEXUOSA, *Benth. in Pl. Wright. l. c.* Hills, from Rainwater Creek to the Limpio, June; in flower. (1365.) — Calyx and corolla tomentulose or cinereous-pubescent, like the slender branches.

M. DYSOCARPA, *Benth. in Pl. Wright. p.* 62. Mountain valleys, between the Limpio and the Rio Grande, June; in flower. (1366.)

M. DYSOCARPA; var. minus villosa; ramis herbaceis; aculeis petiolorum etiam validis. — Stony hills at the copper mines, New Mexico; Aug. (1040.) — The flat cauline prickles are 4 or 5 lines long, and often 3 lines wide at their base. The stems are apparently procumbent.

M. WRIGHTII (sp. nov.): suffrutescens, sericeo-puberula; caulibus (decumbentibus?) aculeis sparsis brevibus rectis armatis; stipulis subulatis; petiolis parce aculeolatis; pinnis 7–10-jugis; foliolis 10–15-jugis dimidiato-oblongis fere aveniis mucronulatis supra glabratis subtus sericeis; spicis cylindricis; floribus 4–5-meris 8–10-andris glabriusculis; calyce corolla dimidio breviore; ovario pubescente. — Hill-sides on the Sonoita, Sonora; Sept. (1041.) — "Many stems from the same root, two or three feet long." Stems slender, striate-angled, in the specimens mostly simple and herbaceous (the base not seen), copiously armed with straight and conical, or slightly flattened, scattered prickles, which are from one to two lines in length. Rhachis with the petiole 2 to 3½ inches long, armed with a few minute prickles. Pinnæ 7–9 lines long. Leaflets 1½ to barely 2 lines long, half a line wide. Spikes axillary, and somewhat panicled or racemose at the summit of the stem, one to two inches long, densely flowered. Calyx and corolla minutely puberulent, membranaceous; the latter broadly funnel-form, a line and a half long. Stamens three or four times the length of the corolla. Legume not seen; the specimen being in flower only. — This would appear to be related to M. puberula, *Benth. in Hook. Lond. Jour. Bot.* 5. *p.* 88; but that is described as unarmed, and with larger leaflets.

M. GRAHAMI (sp. nov. Ameria, Acanthocarpæ): frutescens, decumbens, glabra; caule aculeis infrastipularibus geminis rectis cum paucis sparsis subrecurvis armato; rhachi communi sæpeque partialibus aculeolis recurvis raris obsitis; stipulis setaceis; pinnis 6–8-jugis; foliolis 10–15-jugis oblongis venosis; pedunculis folio brevioribus; capitulis globosis; floribus glabris 5-meris; corolla calyce brevissime dentato triplo longiore; legumine oblongo-lineari recto glabro margine rariter aculeolato vel inermi. — Mountain valleys of Sonora, between the San Pedro and the Sonoita; Sept. (1042.) — "Stems many from the root, one or two feet high, procumbent," rather stout and rigid, lignescent; the base probably truly woody. Infrastipular prickles 2 or 3 lines long, straight: on some stems there are a number of (similar, but more or less recurved) scattered prickles besides; on others, scarcely any. The small prickles on the leaves (on the main rhachis and often on its branches also) are hooked. Rhachis with the petiole 3 or 4 inches long: pinnæ about an inch long. Leaflets 2–3 lines long, oblong or ovate-oblong, mucronulate, oblique, coriaceous, 3–5-nerved at the base, and pinnately veined from the midnerve (the veins conspicuous and somewhat reticulated underneath), glabrous, except a few minute and scattered hairs along the margins, and on the rhachis. Peduncles axillary, 7–18 lines long. Bracts minute. Corolla a line and a half long. Pod an inch to an inch and a half long, three lines wide, straight, obtuse, glabrous; the margin beset with two or three minute prickles on each side, or else naked; the valves thick and coriaceous, separating entire from the margin at maturity. Seeds 5 or 6.

CALLIANDRA CHAMÆDRYS, *Engelm. in Pl. Fendl. p.* 39; var. pinnis nunc 4-jugis (2–4-jugis); foliolis magis sericeo-pilosis (1–2½ lin. longis); pedunculis gracilibus (8 – 12 lin. longis.) — Stony soil, between the copper mines, New Mexico, and the Chiricahui Mountains; Sept. (1043.) Also between the Leona and Rio Frio, Western Texas; July. (1367.) — Stems upright, a foot or more high, from a thick woody caudex. Pods 2 – 3 or even 4 inches long, strigosely silky-canescent, tapering from the middle to the base, but not truly stipitate. — Engelmann described the species from Gregg's stunted specimens: these are well-developed ones; those from New Mexico are more silky-pubescent; so that I fear the species is hardly distinct from C. eriophylla, *Benth.*

C. CONFERTA, *Benth. in Pl. Wright. l. c.* Limestone hills near the San Pedro, Western Texas; July. (1368.)

C. HUMILIS, *Benth. in Lond. Jour. Bot.* 5. *p.* 103. C. herbacea, *Engelm. in Pl. Fendl. p.* 39; *Gray, Pl. Wright. p.* 63. Hill-sides of the Limpio, and westward; June. Also at the copper mines; and near Santa Cruz, Sonora; Sept. (1044.) — The stems are herbaceous nearly to the base, at most a span high, from a lignescent, very long and horizontal root. The pubescence is either copious, or at length nearly all deciduous. Pinnæ 3 – 6 pairs, 1 – 2 inches long. Most of the capitula are on peduncles of about an inch in length, while others are sessile or nearly so. The very young pods are hirsute; the mature ones hirsute-puberulent or glabrate: valves coriaceo-membranaceous, with very thick margins. "Stamens pale red."

C. RETICULATA (sp. nov.): pilosa, mox glabrata; caulibus spithamæis diffusis subherbaceis e radice magna lignescente; stipulis ovatis nervosis; pinnis 1 – 3-jugis; foliolis 4 – 11-jugis ovalibus obtusissimis obliquis 3 – 5-nerviis laxe reticulatis supra nitidulis glabris; pedunculis petiolo communi subæquilongis; calyce ad medium fere 5-fido hirsuto corolla glabriuscula dimidio breviore; legumine glabello, valvulis membranaceo-coriaceis marginibus incrassatis. — Stony hills at the copper mines, New Mexico; Aug. (1045.) — Manifestly related to the foregoing, and with the same low and nearly herbaceous stems from a lignescent root, which is one or two feet long. But the pinnæ (1 to 2½ inches long) are rarely more than two pairs, and the leaflets are from 3 to 5 lines long, 1½ to 2½ lines wide, more conspicuously nerved and reticulated; and the calyx is fully half the length of the corolla. Stipules rigid, 2 lines long, ovate, or the uppermost oblong or lanceolate. "Filaments pink," exserted 3 or 4 lines. Immature legumes as in C. humilis.

LEUCÆNA RETUSA, *Benth. in Pl. Wright. p.* 64. Pebbly banks of the Rio Frio, Texas, and west to the Limpio, May, June. (1046.) — "Stems much branched from the root, 4 – 6 feet high."

ACACIA WRIGHTII, *Benth. in Pl. Wright. p.* 64. Prairies of the Rio Frio, to Los Moros, Texas. (1047.) — "A spreading bush, 4 to 10 feet high."

A. GREGGII, *Gray, Pl. Wright. p.* 65. Hills of Live Oak Creek, Western Texas; May. Also between Van Horne's Wells and the Rio Grande; June. (1048.)

A. COULTERI, *Benth. in Pl. Wright. p.* 66. Prairies between Piedra Pinta Creek and Los Moros; July. (1369.) — The specimens are in flower, with a single ripe pod of the preceding year. The shrub is said to be from 4 to 6 feet high; the branches are armed with a few minute prickles. The pinnæ are 5 to 6 pairs. The densely-flowered spikes are oblong or cylindrical, not over an inch in length and often much shorter; and the peduncle an inch or an inch and a half long. By an error in transcribing, in *Plantæ Wrightianæ* the flowers are said to be 2½ inches, instead of 2½ lines, in length.

A. TEPHROLOBA, *Gray, l. c.* Stony prairies, Zoquete Creek, &c., Western Texas, May; in flower and with young fruit. Big bend of the San Pedro, July; with ripe fruit. (1049.) — "Shrub 1 – 2 feet high."

A. CONSTRICTA, *Benth. in Pl. Wright. p.* 66. Stony hills, from the Limpio to the Rio Grande; May, June (in flower and fruit). Also in valleys of the Agua Prieta, Sonora, Sept.; in fruit. (1050.)

A. CUSPIDATA, *Schlecht. in Linnæa,* 12. *p.* 573; *Gray, Pl. Wright. p.* 66. Stony hills, at the copper mines; Aug. (1051.)

A. RŒMERIANA, *Scheele in Linnæa,* 21. *p.* 546. Rocky hills of the San Pedro, Texas, May; in fruit. (1052.)

ROSACEÆ.

CERASUS (MICROSERASUS) MINUTIFLORA, *Engelm. in Pl. Lindh.* 2. *p.* 185; *Gray, Pl. Wright. p.* 68. Stony hills of San Felipe Creek, Texas, May; in fruit. (1053.)

C. VIRGINIANA, *DC.*; var. foliis parvulis subtus molliter pubescentibus pallidis. — Sides of mountains, at the copper mines, New Mexico, Aug.; in fruit. (1054.) The same as Fendler's No. 186.

C. CAPOLLIN, *DC. Prodr.* 2. *p.* 539; *Benth. Pl. Hartw. p.* 10. Banks of a torrent between Rock Creek and the Limpio, June; in fruit. (1370.) — This is exactly Hartweg's No. 48, and Coulter's No. 89; all with broader leaves than is described by De Candolle, namely, oblong-ovate. No. 623 of Gregg's collection, from Real del Monte, however, accords with the character, having leaves of about the shape and size of those of Salix fragilis. I think all of them are no more than varieties of C. serotina.

SPIRÆA DUMOSA, *Nutt. in Hook. Lond. Jour. Bot.* 6. *p.* 217. New Mexico; probably with the next. The same as Fendler's No. 188.

S. DUMOSA; var. foliis majoribus rotundatis haud cuneatis; panicula ampla nutante ut in S. ariæfolia. — Sides of hills at the copper mines, New Mexico; Aug. (1055.) — "A slender bush, 6 – 10 feet high."

CERCOCARPUS PARVIFOLIUS, *Nutt. in Torr. & Gray, Fl.* 1. *p.* 427; var. foliis subintegris parvis (5 – 10 lin. longis). — Hill-sides, along Coppermine Creek, New Mexico; Aug. (1056.) — Shrub 6 to 8 feet high. The same as No. 183 of Wright's first collection; but the leaves still smaller.

C. BREVIFLORUS (sp. nov.): foliis spathulato-oblongis integris sessilibus utrinque sericeo-puberulis; floribus plerisque geminis sessilibus; tubo calycis limbo breviore. — Sides of mountains near Frontera, New Mexico; July. (1057.) — "Shrub 2 – 4 feet high, much branched; the branches tortuous, spinescent. Leaves 4 to 6 lines long, minutely silky-pubescent and of nearly the same hue both sides, entire, or obscurely 2 – 3-toothed at the apex. Flowers shorter than the leaves, closely sessile; the pedicelliform tube at most a line in length, usually still shorter; the expanded limb 2 lines in diameter. Fruit not seen. Style villous below. — The smallest of all the species, both for the leaves and the flowers.

Cowania Mexicana, *Don in Linn. Trans.* 14. *p.* 574. *t.* 22; *Benth. Pl. Hartw. p.* 16. Hills on the Sonoita, near Deserted Rancho, Sonora; Sept. (1058.) — "Shrub 6 to 10 feet high, with short and stout branches." The petals would appear to have been ochroleucous, at most sulphur-colored; but Mr. Wright assures me that they were *white* in the living plant, which is also stated of Geum? dryadoides, *DC.* Were the flowers of Don's plant truly yellow?

Fallugia paradoxa, *Torr. in Emory's Rep. t.* 2; *Gray, Pl. Wright. p.* 68. On the Pecos, Western Texas, in alluvial soil; June. (1059.)

Potentilla paradoxa, *Nutt. in Torr. & Gray, Fl.* 1. *p.* 437; *Gray, Pl. Wright. p.* 68. Sand-bars of the Rio Grande near El Paso and Frontera; July. (1060.)

Rubus Neo-Mexicanus (sp. nov.): inermis, fruticosus; ramis glabellis eglandulosis; foliis rotundo-cordatis breviter 3 – 5-lobis molliter pubescentibus, lobis argute serratis subincisis; stipulis lanceolatis; pedunculis 1 – 2-floris sepalisque apice caudatis parce glandulosis; petalis albis orbiculatis calyce longioribus; carpellis numerosis rubris. — Mountain-sides at the copper mines; Aug., in flower; Oct., in fruit. (1061.) — Stems 3 – 5 feet high, much branched, glabrous; the branchlets pubescent, but not glandular nor hispid, slender. Stipules proportionally larger than in R. Nutkanus. Leaves one to 2½ inches in diameter, with short and roundish or obtuse lobes, or the terminal lobe acute; when old, the surface is somewhat plicate and rugose. Peduncles about an inch long. Corolla, when expanded, an inch in diameter. — Manifestly related to R. deliciosus, *Torr.*, which has purple flowers.

Rosa blanda, *Ait.*, var. *β. Torr. & Gray.* Valley of the Limpio, especially at Wild Rose Pass, to which it gives the name; June.

LYTHRACEÆ.

Ammannia Wrightii (sp. nov.): caule erecto; foliis lineari-lanceolatis basi auriculatis imis oblongis basi attenuatis sessilibus; pedunculis 1 – 5-floris floribus longioribus; calycis dentibus propriis atque accessoriis brevissimis; petalis et staminibus 4; stylo longiusculo. — Margin of pools and mountain streams east of Santa Cruz, and along the San Pedro, Sonora; Sept. (1062.) — Root annual. Stems 2 to 7 inches high. Leaves 6 to 12 lines long, rather obtuse. Peduncles 3 to 5 lines long; the pedicels 1 to 2 lines long. Bracts linear-subulate. Calyx a line and a half long. Petals orbicular, purple, about the length of the stamens and style. Capsule 2-celled. — The conspicuously pedunculate flowers at once distinguish this from all other North American species.

A. dentifera (sp. nov.): humilis; caule erecto; foliis oblongo-linearibus omnibus basi attenuatis subsessilibus; floribus solitariis sessilibus apetalis tetrandris; calycis dentibus accessoriis subulatis patentibus proprios triangulares conniventes triplo excedentibus. — East of Santa Cruz, Sonora, with the preceding. (1063.) Also at Santa Cruz (a dwarf form, only an inch high). — This species much resembles A. humilis; but it has prolonged and conspicuous accessory calyx-teeth. The stamens are included and the style very short in all the specimens.

CUPHEA WRIGHTII (sp. nov.): annua; caule gracili ramoso adscendente calycibusque setis rubellis subviscosis hispidis; foliis oppositis longe petiolatis ovatis basi rotundatis subacuminatis glabellis; floribus plerisque racemosis; pedicellis binis vel ternis e singulis bracteis quorum superioribus alternis; calyce basi subcalcarato, fauce imberbi, dente postico multo majore; petalis 6; staminibus 11; filamentis basi pilosis; ovario 3-ovulato. — Hills near Santa Cruz, Sonora; Sept. (1064.) — Stems 5 to 10 inches high, slender, sparingly branched. Leaves 8 to 12 lines long, on petioles of half their length, thin, with inconspicuous veins, not scabrous. Flowers solitary or 2 to 3 together in the axils of the upper leaves, and crowded in a terminal raceme; the upper bracts becoming minute, and chiefly alternate. Calyx about as long as the pedicels, 2½ to 3 lines in length, shaped nearly as in C. viscosissima, except that the upper tooth is proportionally larger, and the throat is not bearded within, purplish. Petals 1½ line long, purple. Stamens included: anthers glabrous. Style glabrous. Seeds smooth.

NESÆA LONGIPES, *Gray, Pl. Wright. p.* 68. Comanche Spring, Texas. (1371.)

ONAGRACEÆ.

EPILOBIUM COLORATUM, *Muhl.* Head of the Limpio, in water; June. (1065.)

ZAUSCHNERIA CALIFORNICA, *Presl, Rel. Hænk.* 2. *t.* 52; *Torr. & Gray, Fl.* 1. *p.* 486 (fere var. *β.*). Pebbly bed of mountain streams near the San Pedro, Sonora; Sept. (1372.)

Z. CALIFORNICA; var. foliis glabellis brevibus oblongis vel ovato-oblongis e basi lata sessilibus, inferioribus denticulatis, superioribus integerrimis; floribus intense rubris. — Pebbly bed of a mountain torrent on the New Mexican side of the Chiricahui Mountains; Sept. (1373.) — This variety of this very showy plant considerably resembles the var. latifolia, *Bot. Mag. t.* 4493.

ŒNOTHERA BIENNIS, var. HIRSUTISSIMA, *Gray, Pl. Fendl. p.* 43. Margin of Coppermine Creek, New Mexico; and on the Sonoita, Sonora. (1066.)

Œ. ALBICAULIS, *Nutt.;* var. subcinerea, ramosissima, lignescens, subpinnatifida, *Gray, Pl. Wright. p.* 69. — Sandy soil on the Rio Grande at Doña Ana, New Mexico; July. (1067.) — The same as No. 191 of the former collection. The seeds are fusiform-cylindraceous and smooth, neither striate nor punctate (so that Nuttall's description of them, in *Torr. & Gray, Fl. N. Amer.*, must refer to those of Œ. coronopifolia).

Œ. ALBICAULIS; var.? foliis oblongis sinuato-dentatis vel subpinnatifidis cinereopuberulis vel glabratis; ramis junioribus capsulis calycibusque hirsuto-villosis. — Sandy bed of a creek near the copper mines, Aug. (1068.) — The flowers are large; the tube of the calyx and the petals being an inch long. The scarcely mature pods are rather short for this species; but the seeds are oblong and perfectly smooth. The calyx in the bud is clothed with long villous hairs, in some specimens very copiously; so that this plant may be Nuttall's Œ. trichocalyx.

Œ. CORONOPIFOLIA, *Torr. & Gray, Fl.* 1. *p.* 495; *Gray, Pl. Fendl. p.* 43. Valleys near the copper mines, New Mexico; Aug. (1069.) — A form with the pods longer than in Fendler's No. 222 (1 – 1½ inches long); but the seeds, as in that plant, are turgid-oval or subglobose, apiculate, longitudinally striate-ribbed, and punctate between the ribs.

Œ. CORONOPIFOLIA; var. calycibus hirsuto-villosis seu villosissimis. — Valley of the Pecos, in alluvial soil; June. (1070.) — Seeds striate and punctate, as in the preceding.

Œ. ROSEA, *Ait.; DC. Prodr.* 3. *p.* 51. Hartmannia gauroides, *Spach, Monogr. Onagr. p.* 41. On steep banks of the San Pedro, Sonora; Sept. (1071.) — Also collected by Coulter (No. 165), and by Gregg (Saltillo, and San Angel, near Mexico).

Œ. (MEGAPTERIUM) WRIGHTII (sp. nov.): subcaulescens e caudice perenni, cinereopuberula; foliis lanceolato-oblongis acutis mucronatis venosis dentatis basi plerumque laciniatis seu lyrato-pinnatifidis petiolatis; laciniis calycis tubo multo brevioribus petala flabelliformia subæquantibus; capsula immatura quadrialata. — Stony hills, near the copper mines, New Mexico; Aug. (1072.) — "Flowers open in the morning, withering early." The corolla is evidently yellow, and turns faintly rose-colored in fading, about as large as in Œ. Missouriensis (namely 2 to 2½ inches long), the calyx (tube 5 or 6 inches long), stamens, stigmas, and immature seeds likewise similar. The leaves are herbaceous in texture, from 5 to 11 inches long, including the short petiole, an inch to an inch and a half wide, repand-denticulate or sharply and even doubly toothed, and commonly with 2 to 6 narrow and sharp lobes at the tapering base. The few and very immature capsules are sessile, an inch long, half an inch wide when flattened, canescent or sparsely hairy; the wings two lines wide, but obviously not fully developed.

Œ. WRIGHTII; var. vernalis, minor, magis canescens; foliis brevioribus ovatis oblongisve integerrimis vel plerisque lyratis. — Stony hills near Frontera, New Mexico; April. (1374.) — Root or caudex stout and deeply descending, bearing a rosulate tuft of leaves of 3 or 4 inches in length, and numerous flowers and young pods, and beginning to show short stems. Flowers smaller than in the foregoing; the petals scarcely more than an inch and a half in length. Immature pods an inch and a half long, about half an inch wide, narrowly ovate-oblong, tapering to the summit, sessile, cinereous-puberulent, 4-winged, the wings 2 to 3 lines in width; the texture chartaceo-coriaceous. Seeds packed in a double row in each cell, angled, with a thick testa, transversely corrugate below, the upper part winged in the manner of Œ. Missouriensis, but more decidedly so. — I can scarcely doubt that this is a vernal form of the preceding, and that it should be referred to the section Megapterium, although the wings of the pod are narrow. Except in the fruit it much resembles the following, which indeed belongs to the same section rather than to Lavauxia.

Œ. BRACHYCARPA, *Gray, Pl. Wright. p.* 70. Hill-sides on the Limpio; June. (1073.) — "Flowers expand about sunset." A specimen of this was also gathered on the mountains east of El Paso, in fruit, May. The larger pods are nearly an inch in length, cartilaginous in texture, with pretty thick walls; the angles very narrowly but distinctly winged. Seeds much as in the preceding, but with a thickened crest-like apex with a sharp edge, rather than winged.

Œ. TRILOBA, *Nutt.; Gray, Pl. Wright. p.* 70. Valley between the Salado and Lake Santa Maria, Chihuahua; April. (1375.) — This species has never before been found in the New Mexican region.

Œ. (PACHYLOPHIS?) PRIMIVERIS (sp. nov.): acaulescens, pygmæa, annua vel biennis; radice exili; foliis lyrato-pinnatifidis vel primordialibus integris lanceolato-oblongis ad margines costamque cum calyce villoso-pubescentibus; tubo calycis filiformi lobis (petala flava subæquantibus) multoties longioribus; capsulis ovoideo-conicis acutis leviter 10-costatis in collo sessilibus; seminibus ad chalazam suberoso-cristatis. — Dry hills near El Paso, Feb. - April. (1376.) — This little plant evidently springs from the seed in the autumn, or even in the winter, and flowers at the first opening of spring. Some of the specimens are barely an inch high; the leaves of the larger ones attain the length of 3 or 4 inches; and the tube of the calyx is one or two inches long. The petals, from 5 to 8 lines long, are pure yellow, not turning purplish. Anthers linear, fixed by the middle. Lobes of the stigma linear, distinct. Capsule 8 or 10 lines long, tapering from near the base to the apex, terete, somewhat hirsute, coriaceous; the ribs filiform, equal, not crested nor tuberculate. Seeds very numerous and biserial in each cell, oval, with a thick and rather corky testa, somewhat rugose, grooved along the rhaphe, and enlarged into a thick and short appendage at the chalaza. The plant is strictly acaulescent and probably disappears by the end of spring. The leaves become glabrate. Strictly speaking, this belongs to a new section analogous to Pachylophis.

Œ. (SALPINGIA) LAVANDULÆFOLIA, *Torr. & Gray; Gray, Pl. Wright. p.* 72. Prairies on the Pecos; June. (1074.)

Œ. HARTWEGI, *Benth.;* var. caulibus elongatis; foliis lanceolato-linearibus, *Gray, Pl. Wright. p.* 72. Stony hills of the Pecos; June. (1075.) — Same as Wright's No. 198; passing into

Œ. HARTWEGI, var. FENDLERI; major, foliis lanceolatis et oblongo-lanceolatis. — Œ. Fendleri, *Gray, Pl. Fendl. p.* 45. Declivities, on the Sabinal, Western Texas, May. (1076.)

Œ. TUBICULA, *Gray, Pl. Wright. p.* 71. Valley of the Pecos and toward the Limpio, in alluvial soil; June. (1077.)

Œ. (SPHÆROSTIGMA) CHAMÆNERIOIDES (sp. nov.): annua vel biennis, glabella; caule humili tenero e basi ramoso; foliis oblongis seu lanceolatis repandis subsessilibus, radicalibus subspathulatis in petiolum attenuatis; floribus racemosis primum confertis parvis purpurascentibus; tubo calycis infundibuliformi lobis subduplo ovario multoties longiore; petalis spathulato-oblongis integerrimis calycem stylumque æquantibus; capsulis elongatis filiformibus rectis sessilibus. — Stony hills along the Rio Grande near El Paso; March. (1377.) — Plant a span, or at length 9 or 10 inches high, erect, or the side branches from the base ascending, with wholly the aspect of a small Epilobium; the branches slightly viscous-pubescent. Radical leaves 1½ to 2 inches long, 3 to 5 lines wide; the cauline smaller; the later floral linear-subulate, much shorter than the ovary, and like it pruinose-puberulent. Calyx-tube scarcely a line and a half long. Petals less than a line long. Stigma large, globular. Pods 1½ to 2 inches long, filiform, terete, half a line in diameter, erect-spreading, straight or slightly curved, 4-valved, exactly like that of an Epilobium; but the seeds are not comose.

GAURA SINUATA, *Nutt. in DC. Prodr.* 3. *p.* 44. Valley of the Limpio; May.

G. SUFFULTA, *Engelm. in Pl. Lindh.* 2. *p.* 190. Valley of the Pecos; May. Also valley of Coppermine Creek, New Mexico; Aug. (1078.)

G. VILLOSA, *Torr.; Gray, Pl. Wright. p.* 73. Valley of the Limpio, in alluvial soil; June. (1079.)

G. COCCINEA, *Nutt.*, var. *Gray, Pl. Wright. p.* 73. Prairies from Zoquete Creek, Texas, to the Limpio and the Rio Grande near El Paso. (1080.)

G. PARVIFLORA, *Dougl.* Along the Rio Grande below El Paso; June.

PROSERPINACA PALUSTRIS, *Linn.* Margins of Chicon or Elm Creek, Western Texas; July. (1378.)

MYRIOPHYLLUM HETEROPHYLLUM, *Michx.;* var. foliis emersis parvulis. — With the preceding. (1379.) — The same as No. 202 of the former collection.

LOASACEÆ.

MENTZELIA OLIGOSPERMA, *Nutt.* Pass of the Chiricahui Mountains, Sonora; Sept. (1081.)

M. (BARTONIA) MULTIFLORA, *Nutt.; Gray, Pl. Fendl. p.* 48, *& Pl. Wright. p.* 74. Valleys near Eagle Spring, east of the Rio Grande; June. Mountains near El Paso; April, in flower. (1082.) — Petals ochroleucous, or pale yellow, 7 or 8 lines long, opening at evening.

M. (TRACHYPHYTUM) ALBICAULIS, *Dougl.; Gray, Pl. Wright. p.* 74. *adn.* Sides of mountains near El Paso; April. (1380.)

EUCNIDE BARTONIOIDES, *Zucc.; Gray, Pl. Lindh.* 2. *p.* 192. On the Rio Blanco, and Guadalupe, Texas.

CEVALLIA SINUATA, *Lagasca.* Stony prairies, on San Felipe Creek, and the Limpio; May, June. (1381.)

PASSIFLORACEÆ.

PASSIFLORA TENUILOBA, *Engelm. in Pl. Lindh.* 2. *p.* 192; *Gray, Pl. Wright. p.* 74. Stony prairies, Chicon Creek to the San Pedro. (1083.)

P. AFFINIS, *Engelm. in Pl. Lindh.* 2. *p.* 233. On the Sabinal, Western Texas, July; in fruit.

P. INAMŒNA (sp. nov. § Cieca): herbacea, pilis hamatis hirsuto-pubescens; foliis membranaceis basi cordata trinerviis profunde trifidis, lobis ovali-oblongis subserratis, lateralibus paullo brevioribus plerumque bilobis seu grosse 2–3-dentatis; petiolis apicem versus biglandulosis; pedicellis solitariis; bracteolis 2 setaceis; calyce quinquepartito viridulo. — Sides of mountains near Santa Cruz, Sonora; Sept. (1084.) — "Climbing among rocks, one or two feet high." Leaves 2 or 3 inches in diameter, very thin, roughish-pubescent; the terminal lobe narrowed at the base. Stipules lunate, acuminate. Tendrils axillary, simple. Lobes of the calyx about half an inch in length, triangular-lanceolate. Berry ovoid, an inch and a half in length; the stipe not longer than the persistent calyx.

CUCURBITACEÆ.

Melothria pendula, *Linn.; Gray, Pl. Wright. p.* 75. On the San Pedro, Western Texas.

Sicydium Lindheimeri, *Gray, Pl. Lindh.* 2. *p.* 194, *& Pl. Wright. p.* 75. On the Rio Frio, Leona, Howard's Creek, and San Pedro, Western Texas; May, June. (1085.) — Berry an inch in diameter.

S. Lindheimeri, var. tenuisectum, *Gray, Pl. Wright. l. c.* Valley of the Pecos, June; and New Mexico between Frontera and the Mimbres, July. (1086.) — The New-Mexican specimens have small leaves, barely an inch in diameter, and compoundly dissected into lobes which are only a line in width. The globose berries are from half to two thirds of an inch in diameter.

Cucurbita perennis, *Gray, Pl. Lindh.* 2. *p.* 193. Along the San Pedro, Western Texas; May. (1087.) — "Certainly monœcious. It exhales an unpleasant smell when bruised."

C. digitata (sp. nov.): radice perenni carnosa; foliis 5-partitis subtus ramisque hispido-scabris supra glabellis secus costas venasque pube brevissima sæpius albo-variegatis, infimis segmentis oblongis sinuato-lobatis, superioribus lobis linearibus elongatis subintegris; calycis lobis fl. fœm. brevissimis, masc. obsoletis; fructu globoso. — Prairies, in loose, sandy soil, between the copper mines, New Mexico, and Conde's Camp; Aug. (1088.) — "Root large, fleshy. Branches prostrate, running from 10 to 20 feet." The segments of the upper leaves are about 3 inches long and 2 to 4 lines wide, either entire, or with one or two laciniate teeth or small lobes towards their base; those of the lower leaves are shorter, about an inch wide, and considerably lobed or incised. Corolla 3 inches long, funnel-form, yellow.

Apodanthera? undulata (sp. nov.): cinereo-hispidula, caulibus e radice carnosa maxima plurimis prostratis; foliis rotundato-reniformibus undulatis denticulatis nunc sublobatis subtus strigoso-canescentibus; floribus pedunculatis luteis, masculis ex axillis infimis racemoso-corymbosis, fœmineis ex superioribus axillis solitariis; tubo calycis maris tubuloso-infundibuliformi; pepone ovoideo. — In valleys from Eagle Springs to the Limpio; June. (1382.) (Carizal, below El Paso, *Wislizenus.*) — Root nearly as thick as a man's leg, penetrating two or three feet in depth, then branching. Stems prostrate, extending from 3 to 8 feet, and with the foliage strigose-cinereous. Leaves 2 to 6 inches in diameter, undulate and somewhat crisped, green above. Staminate flowers all from the lowest axils; the others, however prolonged the stems, bearing solitary pistillate flowers only. Peduncles about the length of the petiole; or the sterile longer than the leaves, bearing several flowers, on pedicels of one or two inches in length. Calyx-tube about an inch long; of the sterile flower narrowly tubular funnel-form; of the fertile oblong-urceolate, and little produced beyond the summit of the ovary; the lobes subulate, 3 lines long. Petals of the sterile flowers oblong, or oval, distinct, inserted by a narrowed base, 9 or 10 lines long; those of the fertile flowers nearly similar. Anthers sessile or nearly so in the throat of the calyx, lightly cohering, at length separate, three in number, two of them bilocular and one unilocular (scil. 5, triadelphous,

of authors), rarely 4, two of them bilocular and two unilocular: connective somewhat dilated; the cells linear, 2½ lines long, straight or nearly so. There is a thickish disk in the bottom of the calyx. Stigma 3-lobed, fleshy. Ovary 3-celled? many-ovuled. The mature fruit, according to Mr. Wright, is ovoid, 3 or 4 inches long, about the size of that of Cucurbita perennis, perhaps of softer consistence than in that plant, but a true pepo. — I cannot hesitate to refer this to the imperfectly known genus Apodanthera of Arnott. I doubt, however, if it be a congener of Apodanthera gracilis, *Benth.*, as it is certainly very different from Melothria.

CYCLANTHERA DISSECTA, *Arn. in Hook. Jour. Bot.* 3. *p.* 280; *Gray, Pl. Wright. p.* 75. Guadalupe Pass, between Santa Cruz, Sonora, and the copper mines, New Mexico; Oct., with ripe fruit. (1089.) — The mature fruit is dry, with thin walls, somewhat compressed, semiovate, one margin strongly gibbous, the other straight or slightly concave, pointed (the point a little recurved), an inch long, beset with soft and naked prickles; within, near the concave or inner edge, hangs from the summit an elongated placenta, which reaches nearly to the base of the single cell; here, on short and persistent 2-ranked funiculi, are attached 6 or 7 ascending seeds, partly covered by the fibrous remains of the tissue of a sparing pulp. The seeds are 3 lines long, compressed, pointed at the hilum, nearly truncate at the opposite end; the testa brown, firm, tuberculate-roughened. Whether the ovary is more than one-celled I cannot clearly ascertain. If there are any partitions, they speedily disappear.

ELATERIUM? WRIGHTII (sp. nov.): caule pubescente; foliis reniformi-cordatis subangulatis apice triangulato-acuminatis puberulis margine vix denticulatis; cirrhis trifidis; floribus masculis racemosis, calyce brevissimo subplano, fœmineis solitariis collo filiformi; petalis ovalibus acutiusculis; ovario biloculari, loculis singulis 3-ovulatis; fructu oblongo recto aculeis longis mollibus hirsutis armato apice rostrato-apiculato. — Mountains at Guadalupe Pass, with the preceding; Oct. (1090.) Organ Mountains, near El Paso; May. — "Climbing, 4-6 feet high." This is evidently a congener of Elaterium pubescens, *Benth.*, and of other Mexican plants referred to this genus. The leaves are much like those of E. pubescens, and the inflorescence is similar; but the male flowers are several times smaller (only 3 lines in diameter) and on shorter pedicels, and the calyx is as flat as that of a Sicyos. I should have referred it to E. hastatum, *H. B. K.*, except that the male flowers can hardly be called minute; and the fruit is not reniform; nor is it 2-valved, but dehiscent at the apex. The fruit is from 12 to 18 lines long, the slender prickles half an inch long. The dissepiment remains, either complete or incomplete, at maturity. Seeds 2 or 3 in each cell, flattish, truncate at the apex, tuberculate, nearly 3 lines long. — The petals are sprinkled with adherent pollen-grains as in E. pubescens, in which they were described as "punctate."

E.? COULTERI (sp. nov.): parce scabro-pubescens; foliis rotundo-cordatis profunde 5-lobis, lobis ovatis dentatis acutis, terminali acuminato; cirrhis trifidis; floribus masculis racemosis, calyce brevissimo patente, fœmineis solitariis collo filiformi; petalis oblongis retusis; fructu fere præcedentis. — (Zacatecas, Mexico, *Coulter*, No. 51.) Hills along the Coppermine Creek, New Mexico; Aug. — The few specimens are in flower only; but it appears to be the same as one I possess from Coulter's Mexican collection, which exhibits the fruit. The corolla is twice the size of that of E. Wrightii. The leaves are one to two inches in diameter. — Sicyos eremocarpus, *Schauer in Linnæa*, 20. *p.* 722, is probably a congener of this, and possibly the same species; but it is said to have the lobes of the leaves entire or nearly so, the tendrils simple, and the fruit glabrous. The surface of the fruit and the prickles in ours are sparsely hirsute.

Sicyos parviflorus, *Willd. Spec.* 4. *p.* 626; *H. B. K. Nov. Gen. & Spec.* 2. *p.* 119. Stony hills, near the copper mines, New Mexico, Aug.; and in a rocky cañon towards the Guadalupe Pass, Oct. (1091.) — This is the same as No. 50 of Coulter's Mexican collection, from Real del Monte. The branches and the leaves are usually scabrous-pubescent; and the ripe fruit, which is only three lines long, is ovoid, obtuse, and not crowned with the remains of the calyx. The retrorsely barbed prickles are at length partly deciduous from the mature pericarp, which is closely conformed to the oval seed. The leaves are rugosely veined, rounded in outline, and very unlike those of S. angulatus. Instead of the rank smell of that species, the foliage, in cultivated specimens, exhales a rather pleasant odor in drying.

SICYOSPERMA, *Nov. Gen.*

Flores monoici. *Masc.* Calyx late campanulatus, subulato-5-dentatus. Corolla calyci adnatim inserta, limbo 5-partito, lobis apice bicuspidatis. Stamina 5, in columnam apice capitato-antheriferam connata, imo calyce inserta: antheræ ovales, uniloculares, parallelæ, adnatæ. *Fœm.* Calycis tubo supra ovarium constricto, limbo planiusculo 5-dentato. Corolla maris, nisi lobis integris muticis. Ovarium uniloculare, ovulo unico pendulo. Stylus brevis: stigma peltatum trilobum. Fructus utriculiformis, ovatus, lenticularis, pericarpio membranaceo lævi semini arcte conformi. Testa crustacea, lævis. Cotyledones carnosæ, orbiculares, plano-convexæ. — Herba annua, scandens, cirrhosæ; foliis cordato-rotundis angulatis vel sublobatis; floribus minimis albidis, masculis in racemo brevi sæpe trifido, fœmineis in eadem axilla solitariis, primariis breviter pedunculatis nudis, secundariis (ex ramo axillari prolifero androgyno) subsessilibus bractea foliacea tripartita inclusis.

equidistante ab apice;
see Baillon
Bull. Soc.
Linn. Par.
May, 1882

Sicyosperma gracile. — Mountain ravine at Santa Cruz, Sonora; Sept. (1092.) — Stems 2 to 5 feet long, slender, glabrous, or slightly scabrous-hispid, like the petioles. Leaves from three fourths of an inch to three inches in diameter, somewhat pubescent and scabrous, denticulated, angled or obscurely 5-lobed, the terminal lobe conspicuously mucronate. Tendrils mostly 2-cleft. Sterile racemes shorter than the petiole; those of the proliferous branches of the inflorescence shorter than the 3-parted and crenate-toothed bract, which subtends and loosely incloses the accompanying fertile flower. Corolla barely a line or a line and a half in diameter; the lobes ovate; those of the sterile flowers tipped with two conspicuous cuspidate points; which are wanting in the fertile flowers. Ovary at first pubescent with sparse and lax hairs, containing a single ovule suspended from the summit of the cell. Fruit 2 lines long, ovate-lenticular, smooth, green, turning brown or blackish when fully mature, and appearing like a seed: the thin and membranaceous pericarp closely investing the turgid-lenticular and smooth seed. — The character of this singular new genus, of the tribe Sicyoideæ, is drawn both from the dried specimens and from living plants raised from their seeds in the Cambridge Botanic Garden.

GROSSULACEÆ.

Ribes tenuiflorum, *Lindl. Bot. Reg. t.* 1274? Banks of the San Pedro, Sonora, Sept.; in fruit only. Cimieluque Springs, Chihuahua, April; in flower and fruit. (1093.)

R. leptanthum, *Gray, Pl. Fendl. p.* 53. Sides of mountains at the copper mines, New Mexico; Aug. (1094.) — "Stems 3 to 5 feet high." Leaves mostly larger and less fascicled than in Fendler's specimens.

FOUQUIERIACEÆ.

Fouquiera splendens, *Engelm. in Wisliz. Mem. N. Mex. p.* 98; *Gray, Pl. Wright. p.* 76. Rocky hills of the San Pedro, Western Texas, May; in fruit. Hills around El Paso, May; in flower. — Mr. Wright has called my attention to a singular structure of the leaves in this plant, which is well shown in the growing shoots of some of the specimens; namely, that the spines are the persistent petioles of the cauline leaves, or rather a dorsal portion of them, to which a long and slender downward prolongation of the blade of the leaf is adnate for its whole length, and from which it separates, when full-grown, from the apex to the base. The foliaceous portion soon falls away, leaving the long and naked spine, from the axil of which a cluster of subsessile secondary leaves is developed. The spine itself is decurrent on the stem into an elongated *pulvinus* or ridge, which extends downward quite to the next axil directly underneath.*

CRASSULACEÆ.

Sedum Wrightii, *Gray, Pl. Wright. p.* 76. Crevices of rocks at the copper mines, New Mexico; and at Santa Cruz, Sonora; Sept., Oct. (1095.)

SAXIFRAGACEÆ.

Heuchera sanguinea, *Engelm. in Wisliz. Mem. N. Mex. p.* 107. In ravines, at Santa Cruz, Sonora; Sept. (1096.) — "Certainly the most ornamental species of the genus." The flowers are deep red, 4 or 5 lines long, crowded in a simple or occasionally branched thyrsus of an inch or two in length. As in other species, the scape is sometimes perfectly naked, and sometimes furnished with small leaves.

H. rubescens (*Torr. in Stansb. Rep. p.* 388. *t.* 5): glabella; scapo subfoliato vel nudo; foliis cordato-rotundis sublobatis inciso dentatis ciliatis, dentibus brevibus setiferis; panicula laxa multiflora; floribus virido-albis mox rubellis;

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* Fouquiera formosa, *H. B. K.* has recently (in *Kongel. Danske Vidensk. Selk. Skrifter*, for 1851) been characterized and figured by Liebmann as a new and anomalous genus of Polemoniaceæ, named *Philetæria horrida.* From the details of the seeds, it appears that the wing differs from that of F. splendens in being deeply cleft at both ends. — Kunth writes the name *Fouquieria;* but De Candolle, Endlicher, &c. write it *Fouquiera.*

calyce cylindraceo-campanulato, tubo turbinato, lobis oblongis æqualibus; petalis unguiculatis lineari-spathulatis cum staminibus stylisque breviter exsertis. — Crevices of rocks, on mountains near the copper mines, New Mexico; Aug. (a large form, the scapes with the compound panicle one to two feet long), and Oct. (a small form like the specimens gathered in Utah by Capt. Stansbury, the scapes with the more simple panicle a span to a foot high). (1097.) — Petioles either beset with spreading hairs, or naked, as are the scapes. Leaves one to nearly two inches wide; the lobes and teeth short and broad. Scape either leafless or with a few small and sharply toothed or cleft leaves. Pedicels 2 or 3 lines long, minutely granulose-glandular, like the calyx-tube and rhachis, longer than the linear or subulate bracts. Calyx 2 or 3 lines long, at first whitish with the lobes tipped with green, soon turning rose-red or purple. Bracts and pedicels often purplish.

H. RUBESCENS, *Torr.;* var. nana; scapo subspithamæo; floribus parvulis. — With the preceding; Aug. — A few specimens were gathered of this plant, apparently only a dwarfed state of H. rubescens, with the flowers much smaller, but scarcely developed. I suspect it is the same as the Tiarella ? bracteata of Torrey, in James's Rocky Mountain collection, and therefore Heuchera bracteata, *Seringe in DC. Prodr.* If it truly prove to be only a depauperate form of H. rubescens, the anterior name ought to give way, on account of its manifest inapplicability.

H. PARVIFOLIA, *Nutt. in Torr. & Gray, Fl.* 1. *p.* 581; *Gray, Pl. Fendl. p.* 54; var. floribus majoribus magis campanulatis. — Mountain-sides near the copper mines, New Mexico. (1098.) — A form with more campanulate flowers, as large as those of H. Americana. The plant connects the section Heucherella with Holochloa.

FENDLERA RUPICOLA, *Engelm. & Gray, Pl. Wright. p.* 77. *t.* 5. Rocky banks of the San Pedro, Western Texas, May; in fruit. Mountains near El Paso, April; in flower. (1049.) — The petals are puberulent externally (like the inside of the calyx-lobes); they are imbricated in æstivation! — Specimens recently communicated by Lindheimer, in full flower, have their virgate branches loaded with the white blossoms, showing that the plant would be very ornamental in cultivation.

PHILADELPHUS SERPYLLIFOLIUS, *Gray, Pl. Wright. p.* 77. Summit of mountains, at Wild Rose Pass, head of the Limpio; June. (1100.) — Shrub 2–5 feet high, much branched.

P. SERPYLLIFOLIUS, var. foliis floribusque majoribus. — Mountain-sides at the copper mines, New Mexico; Aug. (1101.) — The leaves on the more vigorous branches are from half an inch to even an inch in length, and the expanded flowers almost an inch in diameter; but there is no other apparent difference.

UMBELLIFERÆ.

HYDROCOTYLE RANUNCULOIDES, *Linn. f.* Margin of a creek at Santa Cruz, Sonora; Sept. (1102.)

H. INTERRUPTA, *Muhl.* Comanche Spring, Western Texas; June. (1383.) — The California plant referred here is different.

BOWLESIA TENERA, *Spreng.* was found by Mr. Wright in the streets of San Antonio, Texas; doubtless introduced.

ERYNGIUM LONGIFOLIUM, *Cav. Ic.* 6. *t.* 555; *DC. Prodr.* 4. *p.* 95? Las Playas Springs, near the Sierra de los Animos, New Mexico; Oct. (1103.) — The radical leaves are 3 or 4 feet long, 4 or 5 lines wide, tapering to a point, soft, resembling those of a large Sparganium; their margins entire and naked, or rarely with one or two setiform teeth; these sparingly appear on the similar but shorter cauline leaves. The scales of the involucre are much shorter than the oval heads, linear-subulate, often resembling the paleæ and scarcely exceeding them.

E. LEAVENWORTHII, *Torr. & Gray, Fl.* 1. *p.* 604. Zoquete Creek, Western Texas; July.

E. WRIGHTII, *Gray, Pl. Wright. p.* 78. Pebbly bed of the Limpio; June; also mountain valleys in Sonora, Sept. (1104.)

BERULA ANGUSTIFOLIA, *Koch, Fl. Germ. & Helv. ed.* 2. 1. *p.* 317? *Gray, Pl. Fendl. p.* 55. Helosciadium? Californicum, *Hook. & Arn. Bot. Beech. p.* 142? Sium pusillum, *Nutt.?* Margin of the Mimbres, New Mexico, July; and of the Barbocomori, Sonora, Sept. Between the Leona and Comanche Springs. (1105.) Also found by Lindheimer in Western Texas. — The leaflets vary on the same plant, from oblong and barely serrate, to deeply pinnatifid with linear and often incised segments. I cannot clearly distinguish it from the European plant; although it is likely to be different.

LEPTOCAULIS PATENS, *Nutt.* Hills of the San Pedro and the Pecos; May. (1106.)

L. ECHINATUS, *Nutt.* Dry soil near El Paso, and at Lake Santa Maria; April. (1384.)

CICUTA MACULATA, *Linn.* Springs on the Pecos; June.

DAUCOSMA LACINIATUM, *Engelm. & Gray, Pl. Lindh.* 2. *p.* 210. Pebbly bed of Pedregal Creek, Western Texas; July. (1385.)

THASPIUM? MONTANUM, *Gray, Pl. Fendl. p.* 57; var.? TENUIFOLIUM. Hill-sides of Coppermine Creek, New Mexico; Aug. (1107.) — The specimens accord with the slender-leaved form of Fendler's No. 276, except that they are larger, a foot or more in height. The thick root is inodorous. The segment and lobes of the leaves are all narrowly linear, from 6 to 18 lines long. Umbel on a long peduncle, dense; the primary and secondary rays short. Fruit 2 to 3 lines long, tasteless; the mericarps flattened as much as in most Angeliceæ, oval, each with rather wide marginal wings; the three dorsal ribs extended into sharp and strong ridges, or one or two of them into wings of variable size, occasionally as wide as the marginal ones. Vittæ single and large, or usually double, in each interval.

DAUCUS PUSILLUS, *Michx.* γ. SCABER, *Torr. & Gray, Fl.* 1. *p.* 636. D. scaber, *Nutt.* Mountains near Lake Santa Maria, Chihuahua; April. (1386.)

ATREMA AMERICANA, *Nutt.* Prairies of the Leona and Nueces, May. (1108.)

ARALIACEÆ.

ARALIA HUMILIS, *Cav. Ic.* 4. *p.* 7. *t.* 313. A. pubescens, *DC.*? Mountain ravine, in crevices of rocks, at Santa Cruz, Sonora; Sept. (1109.) — "Stem 2 to 4 feet high," suffruticose, smooth. Leaflets membranaceous, 2 or 3 inches long, minutely pubescent, at length glabrate, ovate or oblong-ovate and acuminate, some of them cordate, others obtuse or acute at the base. I suspect, therefore, that A. humilis, *Cav.* and A. pubescens, *DC.* are not distinct, if the present plant really belongs to either of them.

CAPRIFOLIACEÆ.

Sambucus glauca, *Nutt. in Torr. & Gray, Fl.* 2. *p.* 13; var. foliolis anguste lanceolatis. — Among rocks, on mountains near the copper mines, New Mexico, Oct.; in fruit. (1110.) — "Stems 6 to 10 feet high." Leaflets 5, or the uppermost 3 (wrongly said to be 3 – 5-pairs in the *Flora* above cited), about 3 inches long, 6 to 8 lines wide. Berries glaucous. To this probably belongs Fendler's No. 286, which was erroneously referred to S. pubens. In, both Canadensis

S. **Mexicana**, *Presl in DC. Prodr.* 4. *p.* 323. Around houses at San Elizario on the Rio Grande, June; in flower. (1387.) — "Trunk 8 to 12 feet high, 6 inches or more in diameter." The leaflets vary from 5, or even 3, to 7. Hartweg's No. 1756 belongs apparently to the same species.

Symphoricarpus rotundifolius (sp. nov.): foliis orbiculatis seu ovato-rotundis parvulis ramulisque molliter pubescentibus; floribus axillaribus solitariis; bracteolis ovario brevioribus dentibusque calycis cyathiformis ovatis obtusis glabris; corolla infundibuliformi intus glabra, lobis stamina superantibus. — Sides of mountains around the copper mines, New Mexico; Aug. (1388.) — Stems 3 or 4 feet high, much branched. Leaves 5 to 9 lines long and 4 to 9 wide, softly and finely pubescent above, and finely tomentose underneath, entire, or the larger often repand; the petiole a line or less in length. Flowers almost sessile in the axils of the upper leaves. Calyx with the ovary a line and a half long, its lobes slightly if at all ciliate. Corolla 3 lines long, tubular-funnelform. Fruit not seen. — The leaves are rounded and more downy than in Nuttall's S. mollis, and the inflorescence as well as the shape of the corolla is entirely different. The flowers are more like those of S. glaucescens and S. montanus, but only half as large; and they, as well as the leaves, are larger than in S. microphyllus (as described by Kunth), with which in other particulars its characters do not accord.

Lonicera (Caprifolium) dumosa (sp. nov.): foliis ovalibus basi acutis sessilibus subcoriaceis subtus pallidis utrinque cum ramulis confertis crebre piloso-pubescentibus, floralibus in discum ellipticum connato-confluentibus; capitulo simplici arcte sessili; ovario glaberrimo; calycis limbo truncato hirsuto. — Banks of a torrent between Rock Creek and the Limpio, June; in fruit. (1389.) — A much-branched, slightly twining shrub, 3 – 5 feet high. Leaves 10 to 18 lines long, mostly obtuse, clothed with a soft spreading pubescence, especially underneath; only the uppermost pair connate-perfoliate. Berries globose, 2 lines or more in diameter. Pubescence not at all glandular or viscid. — Although the corolla is unknown, I do not hesitate to characterize this as a new species.

RUBIACEÆ.

Galium microphyllum, *Gray, Pl. Wright. p.* 80. Bed of the Limpio, June; also in ravines and on stony hills, on the Organ Mountains, and at the copper mines, New Mexico; and near Santa Cruz, Sonora. (1111.) — Leaves in some forms larger than in Wright's No. 234.

G. PROLIFERUM (sp. nov.): annuum, hispidulum; caule tenero suberecto debili; foliis quaternatis oblongis internodiis multoties brevioribus; pedunculis axillaribus gracilibus apice florem unicum deflexum inter bracteas 2 foliiformes subsessilem gerentibus nunc sæpe proliferis 2–3-floris nunc quadrifoliatis furcatis atque in ramulum floridum extensis; corolla minima albida; fructu setis longis apice uncinatis hispidissimo. — G. virgatum, var. diffusum, *Gray, Pl. Wright. p.* 80. — High, rocky hills of the Pecos; June, 1851. Stony hills on the Rio Grande, near San Elizario and El Paso; March, April. (1112.) — Stems slender, at first simple and 3 to 5 inches high, bearing one or two slender and spreading peduncles, or simple flower-branches of 4 to 10 lines in length, from each whorl; these are terminated by a pair of leaf-like bracts subtending a deflexed flower, in the manner of G. virgatum (only that has the peduncle extremely short); many of them are proliferous, especially as the plant grows larger, and produce 2, 3, or even 4 flowers one above the other in the same manner; or some bear a whorl of leaves, and are extended into an ordinary branch. The main stem soon branches from the base, attains 6 to 10 inches in length, and becomes diffuse. The bristles of the fruit are longer than in G. virgatum, their length equalling the diameter of the cocci.

G. WRIGHTII, *Gray, l. c.* Crevices of rocks in ravines, at Santa Cruz, Sonora, growing in dense branches; Sept. (1113.)

G. ——— Too young to determine. On the Limpio, with No. 1111.

G. ASPERRIMUM, *Gray, Pl. Fendl. p.* 60. Mountains, east of Santa Cruz, Sonora; Sept. (1114.)

G. TRIFIDUM, fere γ. LATIFOLIUM, *Torr. & Gray, Fl.* 2. *p.* 22. In springs, near the Sierra de los Animos, New Mexico; Oct. (1115.) — "Stems 2 to 3 feet high, supported by club-rushes."

BOUVARDIA HIRTELLA, *H. B. K.*; *Gray, Pl. Wright. p.* 80. Wild Rose Pass, on the Limpio, and on Rock Creek; June. (1116.)

B. JACQUINI, *H. B. K. l. c.*, var. ovata, *DC. Prodr.* 4. *p.* 365? Mountain ravine at Santa Cruz, Sonora; Sept. — "A foot high. Flowers scarlet."

B. OVATA (sp. nov.): herbacea? glabra; foliis quaternis ternisve ovatis utrinque acutis subpetiolatis penninerviis; stipulis setaceis; cyma multiflora; calycis lobis subulatis tubo subduplo longioribus tubo corollæ intus pilosulo sextuplo brevioribus. — Mountain valley from San Pedro to Santa Cruz, Sonora; Sept. (1117.) — Stems a foot or more high, the base not seen, but probably herbaceous, simple, leafy to the top. Leaves about the length of the internodes, 1¼ to 2½ inches long, an inch or more in width, the margins, as also the lobes of the calyx, minutely ciliolate. Corolla an inch long, apparently purple, the lobes short, ovate, and obtuse.

OLDENLANDIA (EREICOTIS) ACEROSA. Hedyotis (Ereicotis acerosa), *Gray, Pl. Wright. p.* 81. Limestone prairies, Turkey Creek, Texas, and westward; May. (1118.) — Mr. Bentham, in *Kew Jour. Bot.* 4. *p.* 172, has pointed out the difference between "Hedyotis, with its fruit splitting into two cocci," and "Oldenlandia, Anotis, and Houstonia, with their purely loculicidal dehiscence," constituting "a natural genus, which is the Hedyotis of Torrey and Gray's Flora." Moreover, the name Oldenlandia should have been preferred by the botanists who combined the whole into one genus, inasmuch as it has forty-four years' priority over Hedyotis, and ten over Houstonia; and Bentham has rightly restored it for the present genus.

O. (HOUSTONIA) RUBRA. Hedyotis rubra, *Gray*, *Pl. Fendl. p.* 61. Stony hills, from Santa Barbara to the copper mines, New Mexico; July. (1119.)

O. (HOUSTONIA) HUMIFUSA. Hedyotis humifusa, *Gray*, *Pl. Lindh.* 2. *p.* 216, *&* *Pl. Wright. p.* 82. On the Limpio; June.

O. ANGUSTIFOLIA (Houstonia angustifolia, *Michx.*), var. = Hedyotis stenophylla, var. parviflora, etc., *Gray*, *Pl. Wright. p.* 81. Rocky hills, near Eagle Springs; June. (1390.)*

MITRACARPIUM BREVIFLORUM (sp. nov.): annuum, glabriusculum; caule erecto subtetragono; foliis lanceolatis utrinque acutis sessilibus; stipulis parce hispidis; calycis laciniis 2 majoribus lanceolato-subulatis corolla subduplo longioribus, 2 hyalinis multo minoribus. — Mountain ravines and hill-sides, near Santa Cruz, Sonora; Sept. (1120.) — Stems 2 to 6 inches high. Leaves about an inch long, 1½ to 3 lines wide, usually four subtending the terminal capitulum. Bracts hyaline, setaceous, glabrous. Calyx almost glabrous; the two large teeth canaliculate, soon recurved-spreading, rigid, a line and a half long; the two small ones resembling interposed stipules, usually considerably shorter than the tubular-funnelform corolla, which is white, glabrous, and seldom a line in length. Dehiscence and seeds as in M. Schizangium. — The shortness of the corolla and the shape of the leaves appear to distinguish this from Bentham's M. lineare.

CRUSEA WRIGHTII (sp. nov.): annua; caule subreverse hirsutulo tereti; foliis lanceolatis acutis hirtello-scabris nervis utrinque 3–4, floralibus 4–8 capitulum laxiflorum terminale involucrantibus basi dilatatis et hispido-ciliatis; calycis laciniis subulatis corollæ purpureæ tubum subæquantibus. Prairies, near Santa Cruz, Sonora; Sept. (1121.) — Stems 3 to 10 inches high, slender, terete, not in the least angled, sparingly branched. Primordial leaves subrotund, small; the others lanceolate or linear-lanceolate, 12 to 20 lines long and 2 or 3 broad, narrowed at the base, except the floral ones. Stipular sheaths bearing 5 to 7 setæ on each side; these are beset, especially those of the upper and floral leaves, with strong bristles. Head rather few-flowered. Bracteal stipular setæ strongly setose with long hispid hairs. Ovary didymous, nearly glabrous. Lobes of the calyx four, equal (or sometimes two of them very short), and with as many small interposed teeth, hispid-ciliate towards the base. Corolla slender, only two lines long. Mature fruit not seen.

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* The following species was discovered in Texas several years since by Mr. Wright; but I have not until now received sufficient specimens to characterize it.

OLDENLANDIA SUBVISCOSA (*Wright. in herb.*): annua, minutim viscoso-hirtella; caule tenello ramoso; ramis divaricatis; foliis linearibus imisve sublanceolatis acutis basi attenuatis; floribus terminalibus nunc alaribus et pseudo-lateralibus solitariis pedunculo æquilongis; corolla minima (albida) hypocraterimorpha, tubo calycem viscoso-hirtellum 4-fidum adæquante lobis obovatis longiore; capsula didyma ad apicem liberum transversim loculicida. — Between La Grange and Lockhart Springs, Fayette County, Texas, in sandy post-oak woods; May. — Plant 3 to 5 inches high, slender, divaricately branched, with a flower in each fork. Leaves half an inch long, half a line, or the lowest a line, in width, sessile, mostly shorter than the internodes. Stipules triangular or ovate, minute, scarious. Pedicels slender, 1½ to 2 lines long, often recurved or spreading in fruit. Lobes of the deeply 4-cleft calyx lanceolate-subulate, in fruit as long as the tube. Corolla a line or a line and a half in length; the limb 4-lobed. Capsule membranaceous, subglobose, didymous, a line and a half in length, somewhat greater in width, loculicidal across the top, which alone is free from the calyx; the cells 10-seeded. Seeds meniscoid, smooth.

DIODIA TERES, *Watt.; Torr. & Gray;* var.? parvula; caule subsimplici erectiusculo; foliis anguste linearibus acutissimis. — Mountain valleys between the San Pedro and Santa Cruz, Sonora; Sept. (1122.) — The specimens are small, from 2 to 6 inches high, from an annual root, nearly erect, and resemble the narrowest-leaved forms from New Jersey, rather than the plant of the Southern States.

COMPOSITÆ.

VERNONIA JAMESII, *Torr. & Gray, Fl. 2. p.* 58. Valley of the Limpio and Rain-water Creek; June. — The form with smaller heads. (1391.)

V. LINDHEIMERI, *Gray & Engelm. Pl. Lindh. 2. p.* 217. Pebbly bed of the San Pedro, Western Texas; July. (1392.)

PECTIS PROSTRATA, *Cav.; Gray, Pl. Wright. p.* 83. Rocky hills, between the copper mines and Conde's Camp, New Mexico, Aug.; and near Santa Cruz, Sonora, Sept. A dwarf variety, like Wright's No. 245. (1123.)

P. (PECTIDOPSIS) ANGUSTIFOLIA, *Torr.; Gray, Pl. Fendl. p.* 61, *& Pl. Wright. l. c.* Stony hills near the copper mines, New Mexico; Aug. (1124.) — The original form of the species, without any awns to the pappus.

P. (PECTIDOPSIS) FILIPES, *Harv. & Gray, Pl. Fendl. p.* 62. Stony hills of Copper-mine Creek, New Mexico; Aug. (1125.) — A low, divergently much-branched plant, with the capillary peduncles from 12 to 18 lines long: exactly like No. 329 of Coulter's Californian Collection, except that the pappus of the disk-flowers is commonly one-awned. P. uniaristata, *DC.* is described as having mucronate-aristate leaves, and the scales of the involucre acuminate.

P. (PECTOTHRIX) PAPPOSA, *Harv. & Gray, l. c.* Sandy soil, at Doña Ana, New Mexico; July. (1126.) — "Divaricately much-branched from the root, procumbent." I have raised this from seed in the Cambridge Botanic Garden. Its prostrate, divergently-branched stems extend to a foot in length; its leaves are often 2 inches or more in length, barely a line wide, rather fleshy; the peduncles about an inch long. Involucre 3 lines long; the golden-yellow ligules (8) about the same length. The pappus of the ray is very short, somewhat auriculate or coroniform, sometimes nearly obsolete. — In a single wild specimen, intermixed with the others, the pappus is reduced to setæ very much shorter than the tube of the corolla, and more or less coroniform-concreted; otherwise it is undistinguishable from the rest of the specimens.

P. (PECTOTHRIX) LONGIPES (sp. nov.): herbacea, glabra; caulibus brevibus ramosissimis decumbentibus; foliis linearibus mucronatis secus margines grosse glandulosis basi ciliis utrinque 1–3 instructis; pedunculis prælongis; involucri multiflori squamis 12–13 uniglandulosis; pappo radii biaristato, disci multisetoso.

— Mountain valleys, between the San Pedro and Santa Cruz, Sonora; Sept. (1127.) — Stems 1 to 3 inches long, in the cultivated plant longer and more procumbent, slender. Leaves 12 to 18 lines long, 1½ to 2 lines wide, rather fleshy. Peduncles 4 to 6 inches long, the earliest scapiform, naked or with a few minute bractlets. Scales of the campanulate involucre 3 lines long, linear, rather obtuse, bearing usually only a single gland. Ligules 12 or 13, oblong. Disk-flowers 40 or more. Achenia puberulent. Pappus in the ray of two slender awns or stout bristles, as long as the tube of the ligule, not scarious-dilated at the base, minutely scabrous; in the disk of 30 or 40 capillary and very unequal scabrous bristles; the longer ones little shorter than the corolla.

P. IMBERBIS (sp. nov.): glaberrima, ultrapedalis; caulibus e radice perenni plurimis erectis gracilibus rigidis angulatis apice paniculato-cymosis polycephalis; foliis anguste linearibus secus margines parce nigro-glandulosis haud setigeris; capitulis pedicellatis; involucri squamis 5 linearibus obtusis glandulis nigris oblongis lineaeribusve parce notatis; ligulis 5 oblongis; fl. disci 5 – 7; acheniis hirtellis; pappo conformi e paleis 2 – 5 inæqualibus sæpius dimidiato. — On the Sonoita, near Deserted Rancho, Sonora; Sept. (1399.) — This singular species, with the characters otherwise of a genuine Pectis, is remarkable for the total absence of cilia fringing the base of the leaves, as well as for its size; the stems being a foot or more in height. The root is rather ligneous. The leaves are 1½ to 2 inches long, only a line wide, and perfectly entire. Peduncles an inch or less in length, sparingly and minutely bracteolate. Involucre 4 lines long; the scales conduplicate around the ray-achenia. Ligules 3 lines long, yellow, changing, as do also the disk-flowers, to red or purple. Disk-corollas slightly bilabiate, the teeth each dotted with a dark gland. Pappus nearly alike in the disk and ray, mostly of about 5 lanceolate paleæ, three of which are minute, and two half the length of the disk-corolla, or in the central achenia all small and nearly equal; in the exterior achenia more or less unilateral.

TRICHOCORONIS RIVULARIS, *Gray*, *Pl. Fendl. p.* 66. In Piedra Pinta Creek, Western Texas; May. (1128.)

CŒLESTINA AGERATOIDES, *H. B. K.; DC. Prodr.* 5. *p.* 108. Crevices of rocks, Guadalupe Pass, between the San Pedro, Sonora, and the copper mines; Oct. (1129.)

STEVIA MACELLA (sp. nov.): annua, subpedalis, viscoso-pubens; foliis tenuimembranaceis glabellis ovatis grosse dentatis triplinerviis basi acutis in petiolum marginatum decurrentibus, superioribus alternis; capitulis paniculatis breviter pedicellatis; involucri squamis acutis; pappo paleaceo brevissimo subcoroniformi floris unici exaristato cæt. aristis 3 corolla sublongioribus. — On shaded rocky cliffs of Coppermine Creek, New Mexico; Oct. (1130.) — Stem slender, erect, with short paniculate flowering branches. Leaves very thin and membranaceous, about an inch and a half long, and an inch wide, all more or less cuneate at the base, on slender margined petioles; the lower only opposite. Heads rather numerous in terminal and lateral short corymbose panicles, longer than the pedicels. Involucre 3 lines long, viscous-pubescent. Corolla 2 lines long, whitish. Awns of the pappus denticulate, purplish. Achenia with the pappus 4½ lines long. — This needs to be compared with S. micrantha, *Lagasca*, which is said to have subcordate leaves and very small flowers.

S. CANESCENS, *H. B. K.* ? *Benth. Pl. Hartw.*; var. glabriuscula; capitulis paullo longioribus; aristis pappi sæpius 4 – 5. — Hill-sides, near Santa Cruz, Sonora; and on mountains near the copper mines, New Mexico; Sept., Oct. (1131.) — This appears to be the same as Hartweg's No. 136, although the stem is less hirsute, and the heads rather longer and looser. To neither is the specific name at all applicable, and very probably it is not the plant described by Kunth. In both the awns are frequently 4, or in ours 5, in number; and one of the flowers is occasionally awnless. The corolla is white or whitish.

CARPHOCHÆTE BIGELOVII (*Gray*, *Pl. Wright. p.* 89, *adnot.*): fruticulosa, subpuberula; caulibus foliosis ramosis; foliis brevibus linearibus oblongisve, inferioribus spathulato-oblongis trinervatis; capitulis solitariis 2 – 3-nisve in ramis brevibus conferte foliosis sessilibus; squamis involucri cuspidato-acuminatis resinoso-punctatis; pappi paleis 11 – 14 aristatis cum squamellis 1 – 3 parvis lanceolatis muticis obsolete uninerviis. — (Near the copper mines, New Mexico, *Dr. J. M. Bigelow.*) Hill-sides in the Organ Mountains, northeast of El Paso; April. (1393.) — Stems numerous from a ligneous root, tufted, a span to a foot high, often fasciculately branched, leafy to the top. Leaves mostly fascicled in the axils and crowded on the short flowering branches; the lowest an inch long and 4 or 5 lines wide, very obtuse, manifestly 3-nerved; the upper narrower, and varying from linear-oblong to linear; those of the fascicles and flowering branches 3 to 6 lines long and 1 to 2 wide, mucronate-acute, usually crowded about the base of the sessile heads, which are fully an inch in length. "Limb of the corolla white; the tube purple." — From the fine specimens gathered last spring by Mr. Wright along with Dr. Bigelow, I am now enabled to complete the account of this well-marked species, which I before imperfectly characterized from a fragment received in a letter. It differs remarkably from the other species in its fasciculate habit and sessile heads.

KUHNIA EUPATORIOIDES, var. (= 247, *Pl. Wright. p.* 83). Zoquete Creek, Western Texas; May. (1132.)

K. EUPATORIOIDES, var. verging to δ. gracillima. Stony hills at the copper mines, New Mexico, Aug.; and from the pass of the Chiricahui Mountains to Santa Cruz, Sonora, Sept. (1133.) Also between Comanche Spring, Texas, and the Pecos; June. (1394.)

CARMINATIA TENUIFLORA, *DC. Prodr.* 7. *p.* 267; *Deless. Ic. Sel.* 4. *t.* 99. Among rocks, at the copper mines, New Mexico; and on the Sonoita, near Deserted Rancho, Sonora; Sept., Oct. (1134.) — I have raised this from seed in the Cambridge Botanic Garden. The young stems are sparingly hairy.

BRICKELLIA OLIGANTHES, *Gray*, *Pl. Wright. p.* 84; var. magis cinerea vel canescens; foliis plerisque linearibus. — Crevices of rocks, in a mountain ravine at Santa Cruz, Sonora; Sept. (1135.)

B. WISLIZENI, *Gray*, *Pl. Fendl. p.* 64, *& Pl. Wright. l. c.;* var. foliis majoribus (3-pollicaribus); ramis axillaribus floriferis 3 – 5-cephalis. — Sides of mountains, near Santa Cruz, Sonora; Sept. (1136.) — This, if I rightly remember, will nearly accord with a plant gathered by Seemann, at Cerro de Pinal.

B. BETONICÆFOLIA (sp. nov.): herbacea, pilis multiarticulatis patentibus hirsuta; caulibus virgatis simplicibus; foliis omnibus oppositis breviter petiolatis cordato-oblongis obtusis grosse crenatis scabro-hirtellis triplinerviis subtus rugoso-reticulatis, floralibus decrescentibus nunc parvis subsessilibus; capitulis pedicellatis in thyrsum terminalem racemosum elongatum laxum superne nudum digestis; pedunculis singulis 2–5-cephalis; involucro 12-floro laxo, squamis 2–3-serialibus lanceolatis et linearibus acuminatis, extimis brevibus ciliatis; acheniis sericeo-villosis; pappo scabro. — Hills, near the copper mines, New Mexico; Oct. (1137.) — Stems several from the same perennial root, 2–3 feet high, roughish-hirsute, or nearly hispid, terminating in a raceme-like, loose and interrupted, nearly leafless, virgate thyrsus, of a foot or more in length. Leaves as long as the internodes, rather rigid, but not coriaceous, very veiny underneath with coarse reticulations, 1½ to 2½ inches long, all more or less cordate at the base; the petioles distinct, but only a line and a half in length. Peduncles and pedicels 3 to 9 lines long, hirsute and somewhat glandular. Heads 5 or 6 lines long; the involucre and the pappus nearly as in B. Wislizeni. — This species should stand next to B. cylindracea and B. Wislizeni, to which it is more closely related than to any of the section which contains B. Cavanillesii, notwithstanding the cordate leaves.

B. BETONICÆFOLIA, var. humilis; foliis parvulis (majoribus sesquipollicaribus) subsessilibus. — Hills east of Santa Cruz, Sonora; Sept. (1138.)

B. CYLINDRACEA, *Gray;* a small variety. Western Texas; May.

B. WRIGHTII (sp. nov.): suffruticosa, minutim glanduloso-scabrella; caulibus ramosissimis; foliis plerisque alternis longe petiolatis deltoideo-ovatis (basi truncatis subcordatisve) acutis grosse-serratis subcoriaceis 3–5-plinerviis subreticulatis; thyrsis paniculatis polycephalis subfoliosis; capitulis pedicellatis; involucro cylindraceo 14–18-floro glabro purpurascente, squamis 3–4-seriatis obtusis, extimis ovalibus, intimis oblongo-linearibus; acheniis hirto-puberulis; pappo scabro. — Hills, near the copper mines, New Mexico; Oct. (1139.) — Stems 3 or 4 feet high, paniculately much branched, smooth; the branches, &c. very minutely glandular-scabrous. Leaves from the base of the stem not seen; the upper cauline all alternate, 1½ to 2 inches long, and the petioles ½ to ¾ inch long; those of the flowering branches similar but smaller, not numerous. The leaves are rigid, but not so coriaceous as those of B. baccharidea, not much reticulated. The very numerous heads are larger than in the last-named species (about 5 lines long), and the inflorescence more open. Pedicels 1½ to 3 lines long. The scales of the involucre are nearly all tinged with purple, especially above the middle. In the arrangement of the species published in *Pl. Wright. p.* 84–86, this would stand between B. baccharidea and B. reniformis. It is probable that its lower leaves are cordate.

B. TENERA (sp. nov.): herbacea, puberula; caulibus adscendentibus ad apicem usque foliosis; foliis omnibus alternis longe petiolatis deltoideo-ovatis obtusis vel acutis crenato-dentatis membranaceis basi trinervatis in petiolum breviter attenuatis; capitulis axillaribus subsolitariis vel paucis in ramulos floridos petiolum haud su-

perantibus; involucre 12-floro cylindraceo glaberrimo, squamis pluriseriatis obtusis, exterioribus ovalibus oblongisve, intimis linearibus; acheniis puberulis; pappo scabro. — In a mountain ravine near Santa Cruz, Sonora; Sept. (1140.) — "Stems branching from the root, 1 – 3 feet high." Leaves very thin and membranaceous, one to two inches in length, longer than broad, especially the upper ones, not so veiny as those of B. reniformis, slightly if at all subcordate. Heads about 5 lines long, on short pedicels. Involucre stramineous. — Perhaps too closely related to B. reniformis; but none of the leaves are reniform, nor so much dilated, and the heads are larger.

B. FLORIBUNDA (sp. nov.): herbacea; caule glabello erecto folioso superne paniculato; foliis alternis longe petiolatis glabris deltoideo-ovatis vel summis ovato-oblongis acutis dentatis triplinerviis venosis; corymbis polycephalis subaphyllis in paniculam compositam amplam laxam digestis; pedunculis pedicellisque glanduloso-pubescentibus erectis; involucro 18 – 20-floro pauciseriali basi 2 – 4-bracteato, squamis extimis oblongis seu lanceolatis acutis parce glandulosis, intimis linearibus obtusis glabris; acheniis puberulis; pappo scabro. — Ravines near Santa Cruz, and on rocky banks of the San Pedro, Sonora; Sept. (1141.) — Stems apparently 3 or 4 feet high; the ample compound corymbose panicle often a foot in length when fully developed, and bearing a large number of heads. Leaves sparsely resinous-punctate, and the floral ones glandular, otherwise glabrous, rather firm in texture, in shape much like those of Eupatorium ageratifolium, but alternate, the lower truncate at the base, slightly if at all subcordate, 2 to 3 inches long, 1½ to 2 inches wide at the base; the uppermost narrower and becoming acute or cuneate at the base. Bractlets lanceolate and linear. Heads 5 lines long, not pendulous. — A very distinct species, belonging to the same section as B. cordifolia.

B. FENDLERI, *Gray, Pl. Fendl. p.* 63. Sides of mountains, near the copper mines, New Mexico; Aug. (1142.) — Leaves both opposite and alternate.

B. GRANDIFLORA, *Nutt.; Torr. & Gray, Fl.* Sides of mountains, at the copper mines, New Mexico; Oct. (1143.)

B. SIMPLEX (sp. nov.): herbacea, glabella; caulibus e radice lignescente plurimis simplicibus apice nudo monocephalis vel 2 – 4-cephalis; foliis oppositis nunc alternis deltoideo-cordatis summis triangulato-hastatis crenato-dentatis basi trinervatis longiuscule petiolatis; involucro plusquam 20-floro pauciseriali basi breviter bracteolato, squamis linearibus acutis; acheniis hirtellis; pappo barbellulato-scabro. — Hills east of Santa Cruz, Sonora; Sept. (1144.) — Stems slender, erect, 12 to 18 inches high. Leaves an inch or less in length, on petioles 4 to 6 lines long; the lowest broad and very obtuse; the upper successively more triangular-oblong and at length acute, strongly crenate-toothed towards the cordate base, almost glabrous. Peduncle 2 – 3 inches long, at least when solitary; when there are two or more heads the peduncle of the lower one is an inch long. Heads 7 or 8 lines long, larger than in B. grandiflora; the involucre resembling that of B. oblongifolia; but the scales narrower.

EUPATORIUM WRIGHTII, *Gray, Pl. Wright. p.* 87. Crevices of rocks, at Guadalupe Pass, New Mexico; Oct. (1145.) — Heads rather larger than in No. 254.

E. SOLIDAGINIFOLIUM, *Gray, l. c.*; var. caulibus 1–2-pedalibus subsimplicibus herbaceis e basi suffrutescente pubescentibus; foliis ovato-lanceolatis parce serratis magis venosis puberulis; panicula magis evoluta; capitulis 5–7-floris. — With the foregoing. (1146.) — These fine specimens require that the character of the species should be a little reformed.

E. AGERATIFOLIUM, *DC.*, var.? HERBACEUM; caulibus basi tantum suffrutescente; foliis sæpius pl. m. cordatis. — Mountains, east of Santa Cruz, Sonora (a small-leaved form); also at Guadalupe Pass, and at the copper mines, under trees (a large-leaved form), Oct. (1147.) — Stems one to three feet high; the foliage in the dried specimens somewhat aromatic. — The longer petioles, acute scales of the involucre, and the pubescent achenia distinguish this from E. aromaticum. Although the stems are herbaceous nearly or quite to the base, it certainly is not specifically distinct from E. ageratifolium, var. Texense, which, like the present specimens, has from 12 to 22 flowers in the capitula. — The pappus in all my indigenous specimens is nearly as long as the corolla; but in a plant raised in the Cambridge Botanic Garden from Lindheimer's Texan seeds, the pappus is only half the length of the corolla; whence I suspect that E. Berlandieri, *DC.* belongs to the same species.

E. SONORÆ (sp. nov. Subimbricata): caulibus herbaceis gracilibus assurgentibus paniculato-ramosis pubescentibus; foliis longe petiolatis oppositis membranaceis deltoideis acuminatis grosse dentatis basi 3–5-nerviis puberulis; corymbis oligocephalis; involucro 24-floro subbiseriali, squamis oblongis bi–trinerviis, exterioribus acutiusculis pubescentibus, interioribus obtusis; corollis carneis; acheniis acute angulatis, angulis hirtellis. — Crevices of rocks, in a mountain ravine, near Santa Cruz, Sonora; Sept. (1148.) — Stems 10 to 20 inches long, often decumbent, striate. Leaves 12 to 18 lines long, on petioles of 4 to 10 lines in length, thin, conspicuously acuminate, deeply dentate with 6 or 8 strong and spreading teeth, or the upper with 3 or 4 on each side, truncate at the base, not cordate, the smaller rameal ones sometimes contracted at the base. Involucre two lines long. Pappus rather shorter than the corolla. — Allied to E. Schiedianum, *DC.*; from which its smaller heads, and smaller, more triangular, abruptly long-acuminate and incisely toothed leaves distinguish it. From E. multinerve, *Benth.*, which seems to be E. Schiedianum γ. diversifolium, *DC.*, it differs in nearly the same particulars, but I fear not sufficiently.

CONOCLINIUM DISSECTUM, *Gray, Pl. Wright. p.* 88, var. (= No. 259). Valleys, between Eagle Springs and the Rio Grande; June. (1149.)

MACHÆRANTHERA TANACETIFOLIA, *Nees, Ast. p.* 224; *Gray, Pl. Wright. p.* 90. Valley of the Pecos, in alluvial soil; June. Also near the San Pedro, Sonora, in low; damp soil; Sept. (1150.)

M. TANACETIFOLIA, var. humilis (spithamæa); involucro subturbinato, appendicibus foliaceis squamarum brevibus minus patentibus. — Near Ojo de Gavilan, New Mexico; Aug. (1151.) — The green tips of the involucral scales are scarcely more prolonged than in some forms of M. canescens.

M. TANACETIFOLIA, var. pygmæa (3–6-pollicaris); capitulis multo minoribus; involucro hemisphærico, squamis breviter appendiculatis. — Dry, stony hills, valley of the Salado, Chihuahua, and near El Paso; April. (1395.) — A remarkably dwarf, precociously flowering state of the species.

M. CANESCENS, var. LATIFOLIA: scabro-pubescens vel puberula (viridi aut cinerea); foliis oblongis seu lanceolatis multidentatis obtusis; involucro squarroso, appendicibus subulatis. — Dieteria asteroides, *Torr. in Emory, Rep. p.* 142. Near the copper mines, New Mexico, and in Sonora near Deserted Rancho; Sept., Oct. (1152.) — Leaves from one third to two thirds of an inch wide; the somewhat hemispherical involucre half an inch in diameter. Rays mostly deep violet in the dried specimens.

M. PARVIFLORA, *Gray, Pl. Wright. p.* 90. Valley west of the Chiricahui Mountains, Sonora; Sept. (1153.)

PSILACTIS ASTEROIDES, *Gray, Pl. Fendl. p.* 72, *& Pl. Wright. p.* 91. On the Rio Grande, near El Paso; and in Sonora near the San Pedro. (1154.)

ASTER? (MEGALASTRUM; pappi setæ rigidæ, complanatæ, serrato-barbellatæ) WRIGHTII (sp. nov.): suffrutescens, subviscoso-pubescens; caulibus ramisve apice nudis monocephalis; foliis spathulatis integerrimis acumine setifero apiculatis in petiolum marginatum attenuatis; capitulo maximo; involucri biseriali squamis ovato-lanceolatis longe caudato-acuminatis. — Stony hills on the Rio Grande 60 or 70 miles below El Paso, near the cañon through which passes the road to San Antonio; March. — Unwilling to multiply the Asteroid genera, I append this remarkble plant to Aster, because if it had yellow rays I should not hesitate to refer it to the analogous genus Aplopappus. Yet the rigid bristles of the pappus (which, although stout and manifestly flattened under the lens, are still capillary), with so strong a denticulation as to become almost barbellate, and the membranaceous, long-acuminate scales of the involucre, taken with the rather peculiar habit, might justly entitle it to rank as the type of a new genus. It has higher claims to such a rank than Biotia, Heleastrum, &c. The involucre, as flattened in the dried specimens, is over an inch in diameter; and the puberulent-glandular scales are from 6 to 10 lines long, including the acumination. Rays 30 to 40, rather broad, 8 or 9 lines long, 2–3-toothed at the apex, purple, according to Mr. Wright. Receptacle nearly flat, alveolate. Disk-corolla, stamens, &c. as in Aster; so is the style, except that the hispid appendages are rather short and obtuse. Ovaries compressed, villous. Pappus white, similar in the disk and ray, about the length of the disk-corollas, not very copious; the bristles stouter even than in A. eryngiifolius, *Torr. & Gr.*, manifestly flattened, taper-pointed, unequal, the smallest half the length of the longer ones and more slender. Stems about a foot high, from a lignescent base, angled. Leaves one to two inches long, including the tapering base or petiole, obscurely veined, 4 to 8 lines wide, abruptly mucronate-acuminate, and with the point extended into a setiform cusp. — Unfortunately only two specimens were seen in flower at the early season when it was discovered. It has doubtless been since collected by Dr. Bigelow or Dr. Parry.

ASTER MULTIFLORUS, *Ait.; Torr. & Gray, Fl.* 2. *p.* 125 (fere β). Stony hills near the copper mines, New Mexico; and near Santa Cruz, Sonora; Aug., Sept. (1155.) Also on prairies of Zoquete Creek, Texas; — a cinereous form, with small and fascicled or crowded leaves, and small heads; exactly A. hebecladus, *DC.* (1396.)

A. MULTIFLORUS, *Ait.*, γ. COMMUTATUS, *Torr. & Gray, l. c.* Rocky mountain-sides, at the copper mines, New Mexico; Oct. (1156.) Also, a large form, with more paniculate heads, of unusual size, passing to A. falcatus.*

A. PUNICEUS, *Linn.*, γ. VIMINEUS, *Torr. & Gray, Fl.* 2. *p.* 141. Margin of springs, valley of the Sierra de los Animos, New Mexico; Oct. (1157.)

A. LONGIFOLIUS, *Lam.; Torr. & Gray, Fl.* 2. *p.* 139. Low bottom of the Mimbres, New Mexico; Nov.

A. NOVI BELGI, *Linn.*? var. foliis membranaceis. — In thickets, on the Mimbres; Oct. (1758.) — A. Novi Belgi and A. longifolius will absorb several nominal species.

A. SIMPLEX, *Willd.; Torr. & Gray, Fl.* 2. *p.* 131. Banks of the Barbocomori, Sonora; Sept. (1159.) — There is more than one prior name for this species.

A. SPINOSUS, *Benth. Pl. Hartw. p.* 20. Low grounds, on the Rio Grande, near San Elizario; June. (1397.)

A. DIVARICATUS, *Nutt.; Torr. & Gray, l. c.* Banks of the Rio Grande, and of the San Pedro, Sonora. (1160.)

A. ANGUSTUS, *Torr. & Gray, l. c.* Tripolium angustum, *Lindl.* Crinitaria humilis, *Hook. Fl. Bor.-Am.* Aster (Tripolium) frondosus, *Nutt.* Conyza Altaica, *DC.* Sand-bars of the Rio Grande, below Doña Ana, New Mexico; July. (1161.) — The older stems are not strict, but diffusely spreading, the lateral ones procumbent. The root is annual or biennial.

A. PAUCIFLORUS, *Nutt. Gen.* 2. *p.* 154; *Torr. & Gray, l. c.* A. caricifolius, *H. B. K.! Nov. Gen. & Spec.* 4. *p.* 92. *t.* 333. Tripolium caricifolium, *Schauer in Linnæa*, 19. *p.* 721. Valley west of the Chiricahui Mountains, in damp, subsaline soil, and near Santa Cruz, Sonora; Sept. (1162.) — Well distinguished by its rigid foliage, and the viscid pubescence or glandulosity of the flowering branchlets, bracts, and pauciserial involucre. The rays when fresh are blue or purple. It is the same as the Mexican plant of Humboldt and Bonpland above cited.

A. PAUCIFLORUS, var. caule tenero, foliis angustissime linearibus. — Las Playas Springs, New Mexico, in subsaline soil; Oct.

A. (OXYTRIPOLIUM) SONORÆ (sp. nov.): glaberrimus; radice annua vel bienni; caule e basi ramoso; ramis patentibus rigidis foliosis; foliis infimis oblanceolatis inciso-dentatis basi attenuatis, superioribus linearibus rariter spinuloso-denticulatis mucronatis; capitulis solitariis majusculis; involucri hemisphærici squamis pluriserialibus gradatim imbricatis lineari-lanceolatis acutissime acuminatis appressis glabris; ligulis exsertis; acheniis sericeo-pubescentibus. — Low valley, in subsaline soil, west of the Chiricahui Mountains, and at San Bernardino, Sonora; Sept. (1163.) — "Stems 10 to 18 inches high, branched from the base; the branches rigid. Leaves about an inch long, thickish, veinless; those of the flowering branchlets small and subulate. Heads about half an inch in diameter, hemispherical. Scales of the involucre all short, the greenish tips subulate-pointed. Rays

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* A. Fendleri, *Gray, Pl. Fendl. p.* 66, appears to be only a form of A. Nuttallii, *Torr. & Gray.*

30 – 40, slender, purple. — A very distinct species, with the heads as large as in A. Moranensis, *H. B. K.* (to which probably belongs A. purpuratus, *Nees*), and nearly as large as in A. flexuosus, not at all turbinate at the base; the scales closely imbricated in numerous series.

A. (OXYTRIPOLIUM) BLEPHAROPHYLLUS (sp. nov.): surculoso-cæspitosus, humilis, glaber; foliis linearibus vel surculorum lineari-spathulatis eximie setoso-ciliatis, ramorum brevissimis; ramulis fastigiatis monocephalis; involucri turbinati squamis pluriserialibus oblongis acutis chartaceis; ligulis 10 – 14 oblongis exsertis; acheniis sericeis. — Las Playas Springs, New Mexico, in subsaline soil; Oct. (1164.) — "Plant forming large patches," the flowering stems a span high. Leaves, more especially those of the surculose shoots, conspicuously fringed with strong white bristles of a length nearly equal to the breadth of the leaf, and the apex tipped with a similar bristle; the upper cauline and rameal only one or two lines long, and soon reduced to subulate bracts less fringed or naked. Heads 3 lines long; the one-nerved scales of the involucre with minutely scarious and ciliolate margins.

ERIGERON MACRANTHUM, *Nutt.; Gray, Pl. Fendl. p.* 67. Stony hills at the copper mines, New Mexico; Aug., Oct. (1165.) — The stems are hispid, more so than in Fendler's No. 330.

E. BELLIDIASTRUM, *Nutt.; Gray, Pl. Fendl. p.* 67. Near El Paso? (locality not recorded).

E. MODESTUM, *Gray, Pl. Fendl. p.* 68, *& Pl. Wright. p.* 90. Prairies of Live Oak Creek, &c.; May. (1166.)

E. DIVERGENS, *Torr. & Gray, Fl.* 2. *p.* 175; *Gray, Pl. Wright. p.* 91. Valleys of the Pecos, Limpio, and Rainwater Creek, in alluvial soil; June: and sides of the Organ Mountains. (1167.) Also on mountains at the copper mines, New Mexico; Aug.: a still more flagelliform state (E. flagellare, *Gray, Pl. Fendl.*). (1168.)

E. DIVERGENS, var. CINEREUM, *Gray, Pl. Wright. l. c.* Mountains, around the copper mines; Oct: a late, much-branched state. (1169.) Hills near El Paso; March, April: the early, normal form. (1398.)

E. (POLYACTIDIUM) DELPHINIFOLIUM, *Willd. Hort. Berol. t.* 90. Polyactidium delphinifolium, *DC. Prodr.* 5. *p.* 282. On mountains at the copper mines, common; Aug. – Oct. (1170.)

E. (CÆNOTUS) ERIOPHYLLUM (sp. nov.): annuum? floccoso-lanatum; caule erecto superne paniculato, ramulis patentibus monocephalis; foliis sessilibus, inferioribus spathulatis vel oblanceolatis versus apicem dentatis, superioribus linearibus integerrimis; involucri squamis glabratis 3 – 4-seriatis, exterioribus brevioribus; ligulis pluriserialibus purpurascentibus pappum simplicem haud superantibus; acheniis plano-compressis hirtellis margine crasso cinctis. — On the Sonoita, near Deserted Rancho, Sonora; Sept. — Stem a foot or more in height. Leaves 12 to 16 lines long, the white and floccose wool at length nearly deciduous from the upper surface. Heads 4 lines long, hemispherical, many-flowered. Ligules narrowly linear. Achenia all fertile, flat, obovate, with a small terminal areola. Pappus entirely simple and capillary, rather longer than the disk-flowers, white, deciduous, the bristles slightly connected at the base. — This plant much resembles the figure of

Erigeron gnaphalioides, *H. B. K.* (Heterochæta? gnaphalioides, *DC.*), except that the panicle consists of fewer, longer, and more spreading branches, and there is no trace of the short exterior pappus which is so conspicuous in Kunth's figure. It is manifestly an Erigeron, of the section Cænotus, to which Mr. Bentham, no doubt correctly, adduces those American Conyzæ of De Candolle with fertile hermaphrodite flowers.*

DIPLOPAPPUS ERICOIDES, *β.* HIRTELLA, *Gray, Pl. Fendl. p.* 69. Stony hills near El Paso; April: a stout, vernal form, like Fendler's No. 348. Prairies from Live Oak Creek to the Rio Grande and the copper mines, New Mexico. (1171.)

TOWNSENDIA STRIGOSA, *Nutt.; Gray, Pl. Fendl. p.* 70. Sandy banks of the Rio Grande, above Doña Ana; July. Stony hills near El Paso; March, April. (1172.) — The plant begins to flower when only an inch high; at length it attains the height of 3 or 4 inches. The root is long and filiform.

DISTASIS MODESTA, *DC. Prodr.* 5. *p.* 279; *Gray, Pl. Wright. p.* 91. Rocky prairies and hills, from Turkey Creek, Texas, to Providence Creek. (1173.)

KEERLIA BELLIDIFOLIA, *Gray & Engelm. Pl. Lindh.* 2. *p.* 220, *& Pl. Wright. p.* 91. Sand-bars of the Nueces; May.

APHANOSTEPHUS RAMOSISSIMUS, *DC.; Gray, Pl. Wright. p.* 93. Prairies of the Sabinal and Nueces, Western Texas; May. (1174.)

A. HUMILIS, *Gray, Pl. Wright. l. c.* Sandy bed of streams, from Eagle Springs to the Rio Grande; June. Near El Paso; March – May. (1175.)

BELLIS INTEGRIFOLIA, *Michx.* Valley of the Pecos to the Prairie-dog towns beyond the Limpio; June. (1176.)

GUTIERREZIA (HEMIACHYRIS) WRIGHTII (sp. nov.): radice annua; caule erecto gracili pedali apice corymboso-paniculato; ramis monocephalis; foliis linearibus planis; capitulis turbinato-hemisphæricis; ligulis 12; acheniis glabris; pappo in radio et disco conformi brevissimo coroniformi margine fere integerrimo. — Margin of dried-up streams, between Barbocomori and Santa Cruz, Sonora; Sept. (1177.) — Stem somewhat striate-angled, strict, simple, or corymbosely branched at the summit; each branch or peduncle terminated by a solitary head. Leaves thin, 12 to 20 lines long, and a line and a half wide, rather obtuse. Heads pretty large for the genus, nearly the size of those of G. (Brachyris, *DC.*) paniculata, not half as large as in G. Alamani. Scales of the involucre with short and obtuse green tips. Ligules nearly 3 lines long. Disk-flowers 20 or more, all fertile. Appendages of the style linear-lanceolate, acute. Pappus strictly coroniform, with the even edge entire or very obscurely denticulate. — An interesting accession to the genus, on account of the annual root and the entire pappus. In the allied G. Alamani, *Gray, Pl. Wright. p.* 91, as in other species of the section, it is coroniform, but strongly toothed or lobed. The shape of the appendages of the style, as well as the presence of a pappus, distinguishes this and G. Alamani from Xanthocoma. The following plant, however, with much the habit of an enlarged Gymnosperma, has short and broad appendages to the style. Yet I cannot separate it from the genus Gutierrezia.

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* Erigeron gnaphalioides, *H. B. K.* is plainly a congener of the Conyza gnaphalioides, *H. B. K.* (to which, if I mistake not, belongs Heterochæta stricta, *Benth. Pl. Hartw.*), the type of Cassini's genus Læennecia, which should rank merely as a subgenus of Erigeron, between Cænotus and Stenactis; differing from the former in the conspicuous exterior pappus, from the latter in the short rays as well as in habit.

G.? (HEMIACHYRIS) GYMNOSPERMOIDES (sp. nov.): caule herbaceo valido subsimplici; foliis lanceolatis vel oblongo-lanceolatis inferne attenuatis apicem versus sæpius denticulatis mucronato-acutis glutinosis penninerviis; capitulis confertissime corymbosis hemisphæricis fere omnibus pedicellatis; involucri squamis linearibus acutis; receptaculo planiusculo; ligulis 25 – 30 angustis discum vix superantibus; fl. disci 40 – 60; acheniis radii glaberrimis calvis, disci minute hirtellis pappo coroniformi dentato lacero et in fl. centralibus setoso-paleaceo superatis. — Low banks of the San Pedro, Sonora; Sept. (1178.) — "Stem 2 to 4 feet high," very leafy to the top, terete. Leaves about 3 inches long, 4 to 6 lines wide, rather thin, rather obscurely feather-veined. Heads very numerous, cymose-crowded at the summit of the stem and of the short flowering branches, forming an ample compound corymb. Involucre glutinous, hemispherical, about 3 lines in diameter; the scales with loose or spreading tips. Receptacle nearly flat, alveolate. Ligules linear-oblong, not longer than their filiform tube. Appendages of the style in the disk-flowers ovate-triangular, acute. Achenia oblong, compressed; those of the ray perfectly glabrous, with a small terminal areola, entirely destitute of pappus; those of the disk minutely and sparsely hairy, with a toothed and lacerate coroniform pappus, which in the exterior flowers is very short, or sometimes obsolete, in the central flowers larger and often produced into 4 – 8 unequal rigid setiform paleæ, the larger occasionally nearly as long as the achenium.

G. (HEMIACHYRIS) SPHÆROCEPHALA, *Gray, Pl. Fendl. p.* 73. Banks of the Rio Grande near El Paso; June, in flower. Hills near the copper mines, New Mexico; Oct. (1179.) — Root annual! Stems a span to a foot high, diffusely very much branched, bearing very numerous solitary heads; the upper leaves reduced to subulate bracts. Heads 2 lines in diameter. Achenia turbinate, silky-villous, especially on the 10 strong ribs. Pappus in these specimens all truly coroniform, as long as the proper tube of the disk-corollas, fully half the length of the achenium, irregularly 4 – 5-lobed or toothed; the lobes mostly obtuse, short, erose. — Those from the copper mines are well-developed specimens of the same plant as Fendler's No. 343, which was immature. No. 315 of Coulter's Mexican collection may be a variety of this, with the paleæ much less concreted. G. eriocarpa differs principally in the multipaleate pappus.

G. MICROCEPHALA, *Gray, Pl. Fendl. l. c., & Pl. Wright. p.* 94. Mountains at Guadalupe Pass, New Mexico; Oct. (1180.)

S. MOLLIS, *Bartl. Ind. Sem. Hort. Gœtt.* 1836; *DC. Prodr.* 7. *p.* 279. S. incana, *Torr. & Gray, Fl.* 2. *p.* 221 (α & β). Sides of mountains at the copper mines, New Mexico; Aug. and Oct. Also on the Limpio. (1181.) — It runs, I fear, into S. nemoralis, and certainly is not distinct from S. nemoralis γ, *Torr. & Gray.*

S. PETIOLARIS, *Ait.; Torr. & Gray, l. c.;* at least the plant of *Pl. Wright. p.* 94. With the preceding. (1182.)

S. OCCIDENTALIS, *Nutt. in Torr. & Gray, Fl.* 2. *p.* 226. Thickets, in the bottom of the Mimbres, New Mexico; Oct. (1183.)

LINOSYRIS GRAVEOLENS, *Torr. & Gray, Fl.* 2. *p.* 234; var. approaching L. albicaulis. Pebbly bed of a creek near Sierra de los Animos, New Mexico; Oct. (1184.) — "Stem erect, branched, 4 to 6 feet high." There is a slight pubescence on the tube of the corolla, but not the long, cobweb-like hairs of S. albicaulis.*

L. PULCHELLA, *Gray, Pl. Wright. p.* 96. Sandy ridges along the banks of the Rio Grande, near Frontera; Nov. (1185.) — No. 287, the locality of which was accidentally omitted, was gathered on prairies below El Paso.

L. WRIGHTII, *Gray, Pl. Wright. p.* 95, & var. foliis inferioribus pinnatifido-dentatis. — Low banks of the Rio Grande, New Mexico; growing in large bunches; Nov. (1186.) — A few specimens of a minutely hirtello-scabrous variety of this species were gathered on the Rio Grande near Doña Ana, in July; which probably connects L. hirtella with this species.

L.? CARNOSA (sp. nov.): glabra; caulibus e basi suffrutescente ramosissimis diffusis rigidis, ramulis patentibus monocephalis; foliis linearibus (subteretibus?) carnosis glaucescentibus, ramealibus sensim abbreviatis subulatis; involucro campanulato 40-floro, squamis 3 – 4-seriatis lanceolatis acuminatis; acheniis sericeo-pubescentibus. — Low, subsaline valley, west of the Chiricahui Mountains, Sonora; Sept. (1187.) — I am doubtful of the genus of this plant, which looks as if it might be a Tripolium without rays. The rigid, but herbaceous, spreading stems are two feet or more in length, bearing numerous alternate leaves, which were fleshy and appear to have been terete or laterally flattened; the lower ones an inch long; those of the flowering branches reduced to minute subulate bracts. The herbage has a strong saline and acrid-bitter taste. The involucre is 3 or 4 lines long, a little shorter than the disk; the scales regularly imbricated and appressed, the exterior successively shorter. Pappus copious, tawny. Appendages of the style slender, linear-subulate.

L. (APLODISCUS) RAMULOSA; *Gray, Pl. Wright. p.* 97. Aplopappus (Aplodiscus) ramulosus, *DC.! Prodr.* 5. *p.* 350. Ravines, at the base of the Organ Mountains, New Mexico; April. (1400.) — Stems 1 – 2 feet high, much branched. Plant with somewhat the habit of Aster multiflorus.

APLOPAPPUS (ERICAMERIA) LARICIFOLIUS (sp. nov.): fruticosus, humilis, fastigiato-ramosissimus, glaber; foliis confertis angusto-linearibus basi attenuatis mucronulatis integerrimis rigidis uninerviis crebre punctatis subresinosis; capitulis ramulos foliosos terminantibus corymbosis; involucro turbinato disco breviore, squamis 3 – 4-seriatis lineari-subulatis appressis; ligulis 5 – 6; fl. disci circiter 12; acheniis sericeo-villosis oblongis. — On mountains, at Guadalupe Pass, New Mexico; Oct. (1188.) — "Shrub a foot high, very much branched." Leaves 6 to 9 lines long, less than a line wide, very much crowded on the branches, but not fascicled. Heads 4 lines long, fastigiate-corymbose. Ligules 2 – 3 lines long. Appendages of the style in the disk-flowers linear, rather obtuse, shorter than the long and linear stigmatic portion. Bristles of the pappus not very copious, slender and capillary, soft, all alike except in length. — This plant destroys the genus Ericameria, *Nutt.*, which, as a section of Aplopappus, forms another point of connection between that genus and Linosyris; Ericameria resinosa, *Nutt.*, being nearly undistinguishable from Linosyris viscidiflora, except in having from two to six rays.

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* Linosyris serrulata, *Torr. in Stansbury's Rep. p.* 289, is only a form of L. pumila (Chrysothamnus pumilus, *Nutt.*), the L. viscidiflora, *Torr. & Gray.*

A. (BLEPHARODON) SPINULOSUS, *DC.* Prairies, &c. from Zoquete Creek, Texas, to New Mexico. (1189.) Also, the nearly glabrous variety, from New Mexico, and a valley west of the Chiricahui Mountains, Sonora. (1190.)

A. GRACILIS, *Gray, Pl. Fendl. p.* 76, *& Pl. Wright. p.* 97. Valley of the Rio Grande, New Mexico, and near the San Pedro, Sonora; Sept. (1191.)

CHRYSOPSIS FOLIOSA, *Nutt.*, var. *Pl. Wright. no.* 299. *p.* 99. Hills, near the Mimbres, New Mexico; Nov.

C. FOLIOSA, var. sericeo-villosissima, incana; capitulis quam in pl. Nutt. majoribus; ligulis elongatis. — Valley between the San Pedro and the Sonoita, Sonora; Sept. — Heads half an inch long, bracteate with leaves. Exterior pappus very manifest, as in all the forms of this species; the short setæ rather than squamellæ often half the length of the achenium.

GRINDELIA ARGUTA, *Schrad. in DC.?* forma glabra. Sonora? (the locality not recorded).

G. SQUARROSA, *Dunal*, fere var. GRANDIFLORA, *Gray, Pl. Wright. p.* 98. Prairies on the Manzanal, Western Texas; July.

LAPHAMIA (PAPPOTHRIX) RUPESTRIS, *Gray, Pl. Wright. p.* 100. *t.* 9. Crevices of basaltic rocks, on mountains of the Limpio; June. (1192.)

L. HALIMIFOLIA, *Gray, l. c.* Hills of the San Pedro, Western Texas; May. (1193.)

L. ANGUSTIFOLIA, *Gray, l. c.* High, rocky hills of the Pecos; June. (1194.)*

PERICOME, *Nov. Gen.*

Capitulum multiflorum, homogamum. Involucrum disco brevius, campanulatum, uniseriale; squamis circ. 20 linearibus per margines angustissimos hyalinos inter se coalitis. Receptaculum planiusculum nudum. Flores omnes hermaphroditi. Corollæ tubulosæ, tubo gracili viscoso-glanduloso, fauce cylindracea, dentibus 4 ovatis patentibus. Antheræ exsertæ, basi subsagittatæ. Styli rami filiformes, leviter complanati, obtusiusculi, extus superne et apice minute hirtelli. Achenia lineari-oblonga, compressa, faciebus glaberrima, marginibus nerviformibus undique barbatociliata. Pappus squamellato-coroniformis, fimbriato-lacerus, fimbriis pilos validos achenii simulantibus. — Herba glabella, ramosa, procera; foliis oppositis summisve subalternis triangulatis vel hastatis longissime acuminatis levissime resinoso-punctatis haud glandulosis; capitulis cymosis; floribus flavis.

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* Dr. Torrey has furnished the characters of the subjoined new species of Laphamia, which is remarkable, both for its finely dissected foliage, and for having a pappus of a single seta in some flowers, in others none at all; — thus confirming the union of Monothrix, *Torr.* with Laphamia vera.

" LAPHAMIA DISSECTA (sp. nov.): nana, patenti-pubescens; caulibus e basi ramosis; ramis foliosis monocephalis; foliis plerumque alternis subrotundo-cordatis pedato-multisectis, segmentis oblongo-linearibus confertis; ligulis nullis; fl. disci circiter 20; pappo e seta unica corollæ tubum æquante vel sæpius nullo. — Crevices of rocks, on mountains, near Presidio del Norte, Aug., 1852, *Dr. J. M. Bigelow.* — Stems 3 or 4 inches high, lignescent at the base; the numerous branches mostly simple. Leaves scarcely one third of an inch long, cut into numerous minute and crowded segments. Heads 4 or 5 lines in diameter. Scales of the involucre about 15. Achenia hispid on the margins, blackish when mature." *Torrey, Mss.*

Pericome caudata. — Among rocks, on the sides of mountains, at the copper mines, New Mexico; Oct. (1195.) — "Plant 4 feet high, much branched, growing in large bunches." Base of the stem not gathered. Branches terete, striate, sparingly puberulent. Leaves nearly all opposite, on long petioles, membranaceous, 3-nerved at the base, dilated triangular, or the upper hastate, with the basal angles usually acuminate or more or less produced, often angulate-toothed below the middle, the apex produced into a very long tail-like acumination. The larger leaves in the specimens are 3 inches broad at the nearly truncate base, and 4 inches long, including the acumination, which is 1½ to 2 inches in length; the uppermost are narrower, but equally caudate. They are sparingly puberulent, especially on the veins, sparsely sprinkled or dotted with minute resinous atoms, like a Eupatorium; but not at all pellucid-glandular after the mode of Tagetineæ. Heads in terminal cymes or corymbs, on slender pedicels, half an inch long. Involucre not bracteate, about 3 lines long; the scales very narrowly linear, one-nerved, their narrowly scarious margins lightly but decidedly coalescent to near the apex, the free tips lanuginous-ciliate. Corolla with the elongated and exserted anthers 3 lines long, yellow; the slender tube very viscous-glandular, about the length of the cylindraceous throat and short limb. Branches of the style convex externally, slightly flattened, the rather indistinct stigmatic lines extending to very near the summit, and there insensibly vanishing, where a fine pubescence begins; the same pubescence extends down the back considerably lower, and disappears insensibly. Achenia 2 lines long, much compressed, margined all round with a strong callous nerve, which bears a dense and conspicuous beard of hispid hairs. Pappus rather shorter than the beard of the achenium, composed of numerous setiform squamellæ which are irregularly united below into a hyaline lacerate crown. There is no trace of any awns. — A genus of even more doubtful position in the family than Perityle, *Benth.*, which with Laphamia, I have continued to append to the Asteroideæ. It agrees with Perityle in the achenia and the (disk) corollas, in the prevailingly opposite leaves, and very nearly in the style; but differs in the absence of a ray, as well as of awns to the pappus, and in the coalescence of the strictly uniserial scales of the involucre. The style would almost do for the Eupatoriaceæ; but the stigmatic lines are continued almost to the tip; and the flowers are yellow. The involucre is like that of Hymenatherum, and the style is exactly that of a Tagetes; but there are no large pellucid glands, and the achenia are flat. Notwithstanding, I should append the genus to Tagetineæ, were it not for the many points of resemblance to Perityle.

Perityle coronopifolia (sp. nov.): multicaulis e caudice suffrutescente, humilis, puberula; foliis parvis, inferioribus oppositis trisectis segmentis tripartitis vel pinnatipartitis, superioribus alternis pinnato-5 – 7-partitis lobis linearibus, summis sæpe integris; receptaculo subconvexo; ligulis oblongis albis; appendicibus styli fl.

herm. subulatis; acheniis oblongis facie glabratis marginibus hispido-villosissimis; aristis pappi 2 barbellato-scabris corolla disci paullo brevioribus. — Sides of mountains at the copper mines, New Mexico, Oct.; also on mountain-summits near Conde's Camp, Sept.; growing in crevices of rocks. (1196.) — Stems a span high, simple or branched from the somewhat ligneous base, sparingly branched at the summit, the branches terminated by single heads. Leaves rather crowded, 3 to 5 lines long, cinereous-puberulent, dissected into small and mostly linear lobes; the uppermost linear or oblong, sparingly lobed, or often entire. Involucre 2 or 3 lines long; the scales linear or lanceolate, cinereous, biserial, often purplish when old. Ligules nearly 3 lines long, broadly oblong, truncate and three-toothed at the apex, white. Disk-corollas rather short, 4-toothed. Pappus of numerous somewhat confluent hyaline squamellæ, forming a crown, and of two slender awns. — A genuine Perityle, although the foliage is finely dissected, much more so than even in Perityle nuda, *Torr.*, an unpublished species from the Rio Gila.

BACCHARIS CÆRULESCENS, *DC. Prodr.* 5. *p.* 402. Banks of the Rio Grande and of the Mimbres, New Mexico; June, Oct. (1197.)

B. SALICINA, *Torr. & Gray, Fl.; Gray, Pl. Wright. p.* 101. Banks of the Rio Grande, below El Paso; June. (1198.)

B. BRACHYPHYLLA (sp. nov.): suffruticosa; caulibus ramosissimis diffusis angulato-striatis glabris; foliis minutis bracteæformibus linearibus vel subulatis integerrimis hirtello-scabris; capitulis pl. fœm. ramulos terminantibus laxe paniculatis; involucro pauciseriali disco breviore, squamis puberulis oblongo-lanceolatis acuminatis margine scariosis; acheniis glabellis. — Between Conde's Camp and the Chiricahui Mountains, in stony soil; Sept. (1199.) — Stems 2 or 3 feet high, slender, excessively branched, very bushy. Cauline leaves 2 to 3 lines long; those of the branches successively shorter, at length reduced to minute bracts. Female heads 2 to 3 lines in length, 12–14-flowered. Pappus short, fulvous. Sterile plant not seen.

B. PTARMICÆFOLIA, *DC. Prodr.* 5. *p.* 419? Mountain ravine at Santa Cruz, Sonora; Sept.: the male plant. (1200.) — The heads are corymbose; the leaves mostly much smaller than is described by De Candolle; the larger are somewhat 3-veined, or rather triplinerved; but the smaller ones not at all so, nor much if at all acuminate. I should refer this rather to B. thesioides, but the bristles of the pappus are clavellate-thickened above. A female plant, which better accords with De Candolle's character, is in Seeman's collection from Northwestern Mexico.

B. PTARMICÆFOLIA, *DC.*? or var. of B. thesioides? Hill-sides, between Barbocomori and Santa Cruz, Sonora; Sept.: the female plant. (1201.) — This is without much doubt the female plant of the last. The small heads are paniculate. The leaves are about an inch long and barely a line and a half wide, not acuminate, tapering to the base, thickly and strongly spinulose-serrulate. Pappus white.

B. TEXANA, *Gray, Pl. Fendl. p.* 75, *& Pl. Wright. p.* 101. Valley of the San Pedro, and near Comanche Spring, Western Texas; July. (1401.)

B. WRIGHTII (*Gray, Pl. Wright. p.* 101): herbacea, glaberrima; caulibus e basi suffrutescente ramosissimis gracilibus flexuosis ramisque acute angulatis, ramulis apice monocephalis; foliis sparsis parvis linearibus et lineari-subulatis integerrimis uninerviis; involucro hemisphærico pauciseriali, squamis lanceolatis acuminatis scarioso-marginatis; pappo fusco, fl. fœm. involucro subduplo longiore. — Sandy hills between Cimieluque Springs and the Salado, Chihuahua, April: the female plant. (1402.) — This accords very well with the male plant collected in Mr. Wright's first journey (No. 307); but the fertile heads are larger and fuller than the sterile, half an inch in length, many-flowered, and with a copious pappus of a fulvous hue, manifestly inclining to reddish. The scales of the involucre are 3 – 4-serial, very smooth, with a green centre, and more conspicuous hyaline margins than in the sterile plant.

B. Wrightii, var. pyrrhopappa: humilis (semipedali), divergenti-ramosissima; foliis plerisque brevissimis; pappo fl. fœm. rubiginoso vel rubescente involucrum plusduplo superante. — (Near Mapimi, Durango, *Dr. Gregg.*) Prairies from Rainwater Creek to Rock Creek, around Prairie-dog towns; June. (1403.) — The fertile plant of the preceding enables me to identify this as a variety of B. Wrightii, of which before the sterile plant alone was known. The mature pappus is half an inch long, of a reddish hue, in Gregg's specimens almost sanguineous.

Tessaria (Phalacrocline) borealis, *Gray, Pl. Fendl. p.* 75, *& Pl. Wright. p.* 102. Low banks of the Rio Grande, New Mexico; May, Nov. (1202.)

Filaginopsis multicaulis, *Torr. & Gray, Fl.* 2. *p.* 263. Rocky hills of the San Pedro, Western Texas; May. Hills near El Paso; March, April: a small, vernal form. (1404.)

Stylocline micropoides (sp. nov.): pygmæa, albo-lanata; paleis receptaculi oblongis basi involutis dorso lanosissimis; pappi fl. masc. setis lævibus. — Hills near Frontera, New Mexico; April. (1405.) — A very woolly, small herb, with the habit of a diminutive Micropus erectus, beginning to blossom when only an inch high; when the stem is terminated by several heads in a glomerate cluster, surrounded by linear-lanceolate leaves of 3 or 4 lines in length, similar to the cauline ones. It soon branches more or less from the base, and is often proliferous from the glomerule. Heads ovoid or subglobose, 2 or 3 lines in length, rather larger than those of S. gnaphalioides, and much more woolly; the paleæ being thickly covered with long and implexed wool, except the scarious tip. These are like those of the Californian species, except that they are narrowly oblong (instead of broadly ovate), and with the lower part, inclosing the flower, contracted and wholly infolded, instead of having a mere saccate fold in the keel. Receptacle columnar and elongated; the fructiferous paleæ, looking like little pellets of wool, falling away at maturity. Sterile flowers 3 or 4 at the apex of the receptacle, naked, or barely subtended by oblong and glabrous paleæ; the abortive ovaries furnished with a very fugacious pappus of three or four slender and smooth, slightly clavellate bristles. Anthers caudate. Achenia obovoid-oblong, slightly compressed, nearly straight. — A true congener of S. gnaphalioides. I see nothing to separate it, nor the other Evacoid genera, from the Gnaphalieæ.

Diaperia prolifera, *Nutt.; Torr. & Gray, Fl.* 2. *p.* 264. Stony hills of the Pecos; May. (1406.) — A very depressed form.

Borrichia frutescens, *DC.* Banks of the Pecos; June: in patches. (1407.)

SILPHIUM SCABERRIMUM, *Ell.*, var. *γ. Torr. & Gray, Fl.* 2. *p.* 279. Thickets on the Sabinal, Texas; July. (1408.)

BERLANDIERA LYRATA, *Benth. Pl. Hartw. p.* 17; *Gray, Pl. Fendl. p.* 78. Valley of Live Oak Creek, Western Texas; May. On Mule Creek, New Mexico; July. (1203.)

MELAMPODIUM CINEREUM, *DC.; Gray, Pl. Fendl. l. c., & Pl. Wright. p.* 103. On the Leona and San Felipe, Western Texas; May: the variety that corresponds to M. ramosissimum, *DC.!* (1204.) Hills near El Paso; April: the form described as M. leucanthum, *Torr. & Gray*, and No. 311 of the collection of 1849.

M. HISPIDUM, *H. B. K. Nov. Gen. & Spec.* 4. *p.* 273. *t.* 399. Valleys between the San Pedro and Santa Cruz, Sonora; Sept. (1205.) — A slender state of the species. The ligules are extremely short, 2 – 3-toothed.

PARTHENIUM INCANUM, *H. B. K. l. c. p.* 260. *t.* 391; *Gray, Pl. Wright. p.* 103. P. ramosissimum, *DC. Prodr.* 5. *p.* 532. Prairies at Cook's Spring, between the Rio Grande and the Mimbres; July. (1206.)

EUPHROSYNE AMBROSIÆFOLIA, *Gray, Pl. Wright. p.* 102. Sides of mountains, near Conde's Camp, New Mexico; Aug. (1207.) — "Stems branching widely." Cauline leaves ovate in circumscription, tripinnatifid; the divisions and lobes crowded. — Cyclachæna xanthiifolia is plainly a congener of this; and that genus must accordingly be reduced to Euphrosyne, notwithstanding the minute rudiment of a corolla in the fertile flowers. — The following plant has nearly the habit of Euphrosyne xanthiifolia, with a floral structure intermediate between that genus, or Iva, and Parthenium.

PARTHENICE, *Nov. Gen.*

Capitulum hemisphæricum monoicum; floribus fœmineis 6 – 8 in ambitu, masculis 40 – 50 in disco. Involucrum biseriale; squamis herbaceo-membranaceis, exterioribus 5 ovalibus, interioribus 6 – 8 paullo majoribus orbiculari-obovatis. Receptaculum convexum, ambitu serie simplici palearum instructum, paleis lineari-navicularibus carnoso-coriaceis per paria ima basi ovariorum fertilium utrimque accretis, in disco paleis minimis setaceis vel obsoletis inter ovaria abortiva. Corollæ radii subtubulosæ, obliquæ, intus fissæ, extus 2 – 3-dentatæ, discum demum subæquantes, styli ramis lato-linearibus dimidio breviores, deciduæ. Flores disci steriles Ivæ. Achenia (radii) obovato-oblonga, obcompressa, glabra, faciebus tuberculis minimis parcis scabra, vix marginata, vertice incurva apiculata, obliqua, intus dente minimo squamaceo instructa, ab involucri squamis discreta, cum paleis vacuis receptaculi utrimque quasi bracteolata secedentia. — Herba annua? orgyalis, pube brevissima molli undique cinerea; foliis omnibus alternis ovatis, majoribus subcordatis, acuminatis duplicato-dentatis; paniculis foliosis laxis; capitulis longiuscule pedicellatis parvulis.

PARTHENICE MOLLIS. — Mountain ravine at Santa Cruz, Sonora; Sept. (1208.) — I have also raised this from seeds, in the Cambridge Botanic Garden. It is an herb of from 4 to 6 feet high, paniculately branched above, with the aromatic odor of an Artemisia, and with much the aspect of Euphrosyne xanthiifolia, except that the leaves are all alternate, and clothed, like the rest of the plant, with a fine and very soft velvety pubescence, and the larger heads (2–3 lines in diameter) are all distinctly pedicelled. Leaves triplinerved; the larger ones 6 to 8 inches long. Inner scales of the involucre with scarious margins, nearly plane, not wrapped around the achenia, nor adherent to them at the base. Corollas greenish, pubescent above; those of the fertile flowers scarcely half the length of the ovary; those of the disk stipitate on the abortive ovaries, funnel-form, 5-toothed. Achenia a line long, rather shorter than the purplish paleæ that are attached to their base, one on each side, and which, when detached, do not carry away the margins of the achenium (as in Parthenium), except a bit at the base. The paleæ are not broad enough to inclose any sterile flowers: those they subtend are deciduous, with the others. Pappus none, except the minute paleaceous tooth at the pointed apex of the achenium. — Distinguished from Euphrosyne by the manifest and almost ligulate corolla of the fertile flowers, the form of the achenium, and the subtending lateral paleæ, &c.; from Parthenium by the less ligulate and deciduous ray-corollas, the reduction of the paleæ of the disk to minute rudiments, and the want of a pappus.

AMBROSIA PSILOSTACHYA, *DC. Prodr.* 5. *p.* 526; *Gray, Pl. Wright. adn. p.* 104. Low banks of the San Pedro, Sonora; Sept. (1209.)

FRANSERIA TENUIFOLIA, var. TRIPINNATIFIDA, *Gray, Pl. Lindh.* 2. *p.* 227, *& Pl. Wright. l. c.* Alluvial prairies of the San Felipe, Western Texas; May (a dwarf form). Cooke's Spring, New Mexico; and in Sonora; Sept., Oct. (1210.)

F. HOOKERIANA, *Nutt.* Valley west of the Chiricahui Mountains, Sonora; Sept. (1211.)

HYMENOCLEA MONOGYRA, *Torr. & Gray, Pl. Fendl. p.* 79, *& Pl. Wright. l. c.* Pebbly bed of a mountain torrent, near Santa Cruz, Sonora; Sept. (1212.) — "Branching from the root, 2 to 5 feet high."

ZINNIA TENUIFLORA, *Jacq. Ic. Rar.* 3. *t.* 590; *DC.! Prodr.* 5. *p.* 535. Z. intermedia, *Engelm. in Wisl. Mem. N. Mex. p.* 107. Hills near Santa Cruz, Sonora; Sept. (1213.) — The specimens well accord with authentic ones of Z. tenuiflora (the name of which is hardly appropriate), and like them are more or less pubescent, and with the peduncles very often neither elongated nor cylindrical.

Z. (DIPLOTHRIX) GRANDIFLORA, *Nutt.; Gray, Pl. Wright. p.* 105. Live Oak Creek, Western Texas, and between the Limpio and the Rio Grande. (1214.)

Z. (DIPLOTHRIX) PUMILA, *Gray, Pl. Fendl. p.* 81, *& Pl. Wright. l. c.* Rocky hills near El Paso; March. Heads of the Aqua Prieta, in mountains east of Santa Cruz, Sonora; Oct. (1215.)

Z. (HETEROGYNE) ANOMALA, var. *Gray, Pl. Wright. l. c. t.* 10. *f.* 2. Alluvial prairies from Chicon Creek, Western Texas, to the Pecos; May, July. (1216.) — "Flowers dark orange."

HALEA TEXANA, *Gray, Pl. Fendl. p.* 83, *& Pl. Wright. l. c.* Stony hills, from San Felipe to the San Pedro, Texas; May. (1217.)

HELIOPSIS PARVIFOLIA (sp. nov.): scabrella; caule gracili; foliis lanceolatis vel subhastatis basi paucidentatis (pollicaribus); pedunculis elongatis sub capitulo ampliatis; involucri brevissimi squamis oblongis obtusis; ligulis persistentibus; acheniis papillosis, disci prismaticis areola acute quadrata. — Hill-sides, between Barbocomori and Santa Cruz, Sonora; Sept. (1218.) — Stem 12 to 18 inches high, very slender, branched. Leaves barely an inch long, 3 to 5 lines wide at the base, which is abruptly contracted into a petiole of 3 or 4 lines in length, mostly obtuse and entire, except near the base. Peduncles 4 to 6 inches long; the apex more or less enlarged and hollow. Involucre 4 lines in diameter. Ligules deep yellow, oblong, half an inch in length, three-toothed at the broad apex. Achenia of the disk acutely quadrangular, the apex square and exactly truncate, with the angles sharp. Ligules persistent, but withering with age.

LEPACHYS COLUMNARIS, var. TAGETES, *Gray, Pl. Wright. p.* 106. Banks of the San Pedro, Western Texas; May. (1219.)

HELIOMERIS MULTIFLORA, *Nutt.; Gray, Pl. Fendl. p.* 84, *& Pl. Wright. p.* 107. Sides of mountains at the copper mines, New Mexico, and near the San Pedro, Sonora; Sept., Oct.: a narrow-leaved form, like Wright's No. 334. (1220.) Also on pine hills between the copper mines and the Mimbres; Oct.: a large and broad-leaved form, like Wright's No. 328. (1221.) — The latter, like the former, has an annual root. The larger leaves are 4 inches long and 6 or 8 lines wide.

H. MULTIFLORA, var. HISPIDA. Low, damp soil, near Santa Cruz and San Bernardino, Sonora; Sept. (1222.) — The leaves are linear or narrowly linear-lanceolate, and, like the stems and peduncles, either sparsely, or in young plants very densely, setose-hispid. Some specimens are canescently hispid: others exhibit gradations to the ordinary forms; else I should certainly have characterized the plant as a new species. A cultivated specimen shows that the leaves are thickish, canaliculate above, and with the large and strong midrib very prominent underneath.

H. TENUIFOLIA, *Gray, l. c.* Rocky hills of the San Pedro, Western Texas; May. Near Eagle Springs; June. (1223.)

SIMSIA EXARISTATA (sp. nov.): annua; caule erecto superne pedunculis petiolisque pilis patentissimis hispido-villosis; foliis ovatis seu oblongo-ovatis acuminatis subserratis hirsutulis longe petiolatis, petiolis exauritis; capitulis corymboso-paniculatis; squamis involucri lanceolatis, exterioribus parce hispidis paullo brevioribus; ligulis 4 – 7 parvis discum haud superantibus; acheniis glaberrimis omnino calvis vel obsoletissime biaristellatis. — S. lagascæformis, *Gray, Pl. Wright. no.* 331, pro parte. — Valley of a tributary of the San Pedro, Sonora; Sept. (1224.) — Stem mostly slender and rather simple, one to two feet high. Leaves all undivided and almost entire, 2 to 4 inches long, on petioles of 1 – 2 inches in length, which are not at all auriculate or dilated at the base. Heads 5 or 6 inches in length: the rays very small and inconspicuous, yellow, as are the disk-flowers. Paleæ of the receptacle mostly scarious, pointed. The achenia are like those of S. subaristata, *Gray, Pl. Fendl.*, but more rarely showing any trace whatever of pappus. That species is canescently strigose, with deeply lobed leaves, the petioles auriculate at the base, the heads larger and solitary, and the exterior scales of the involucre as long as the inner, the ligules exserted, &c. I cannot now refer to these specimens of Wright's former collection, distributed under No. 331, which exhibited awned and silky-pubescent achenia. The specimens preserved in my own herbarium and in that of Mr. Lowell are entirely of the present plant, which has the achenia glabrous and awnless, or rarely with two minute and aristelliform teeth; adding another instance of the want of a pappus in this genus.

S.? (GERÆA) SCAPOSA (sp. nov.): cinereo-puberula; caulibus suffruticosis? abbreviatis folia linearia rigidula scabra conferta gerentibus in pedunculum prælongum scapiformem monocephalum productis; involucro fere uniseriale discum æquante, squamis linearibus foliaceis hirsutis laxis; pappi aristis inæqualibus corolla brevioribus undique cum achenio villosissimis. — Stony hills between the Mimbres and the Rio Grande, New Mexico; Oct. — Only four specimens were gathered, and all but one of them with the flowers not yet expanded. The proper stems are only two or three inches long, and very leafy. Leaves alternate, much crowded, sessile, 2 or 3 inches long, one or two lines wide, acutish, rather thick and rigid, cinereous-scabrous, one-nerved, or obscurely three-nerved, somewhat veiny. Scape, or peduncle, 6 to 12 inches long, naked or nearly so. Head half an inch in length. Involucre lax or spreading, many-flowered. Flowers yellow. Ligules broadly obovate or cuneiform, 3-toothed at the apex, half an inch long. Paleæ of the convex receptacle conduplicate around the disk-flowers, membranaceous, a little hairy near the obtuse tip. Disk-flowers nearly as in S. (Geræa) canescens, *Pl. Fendl. p.* 85. Ovaries compressed, very silky-villous. Pappus of two chaffy awns of unequal length; the shorter awn often not longer than the villous hairs of the achenium, both very villous for their whole length. Although different in habit, this plant appears to be congeneric with one which, in *Proceed. Amer. Acad.* 1. *p.* 48, I named Geræa canescens, and subsequently, in *Pl. Fendl. l. c.*, reduced to a subgenus of Simsia. It is, as it were, an Encelia with awns.

VIGUIERA CORDIFOLIA, *Gray, Pl. Wright. p.* 107; var. foliis omnibus breviter sed manifeste petiolatis tantum subcordatis acuminatis. — Valley of Coppermine Creek, New Mexico, growing under trees; Oct. (1225.) — These are better specimens than Wright's No. 332, on which the species was founded, with thinner leaves, all of them on petioles of 1½ to 3 lines in length. The scales of the involucre are lanceolate, the exterior, with their considerable acumination, little shorter than the inner. The awned scales of the pappus are nearly as long as the disk-corolla; the intermediate scales, 2 or 3 on each side, are almost a line in length, oblong, erose-laciniate at the apex, nearly glabrous. Ligules about 8, half an inch long.

V. CORDIFOLIA, var. gracilis; foliis minoribus fere membranaceis grosse serratis; involucri squamis æquilongis. — With the foregoing; of which it is evidently a state, growing in more shaded situations.

V. CORDIFOLIA, var. foliis amplis (3 – 4 unc. longis 2½ – 3 latis) membranaceis basi vix subcordatis breviter petiolatis. — Sides of a ravine at Santa Cruz, Sonora; Sept. (1226.) — This has the involucre with broader scales, as in No. 332, except that the outer ones are mostly as long as the inner. The leaves are thin, and distinctly petioled. The intermediate paleæ of the pappus are shorter than in No. 1225, commonly 4 or 5 on each side, and either strigose-pubescent or nearly glabrous. I cannot distinguish any of these plants from V. cordifolia; the name of which proves not to have been happily chosen.

V. LAXA, *DC.; Gray, Pl. Wright. p.* 108. V. Texana, *Torr. & Gray, Fl.* 2. *p.* 318. In thickets, valley of the Coppermine Creek, New Mexico; Oct. (1227.)—The large and thin-leaved form of the species. It belongs to De Candolle's first section of the genus, the receptacle, at first convex, becoming truly conical (as well in Berlandier's as in other specimens), as is also noticed by Schauer, in *Linnæa*, 19. *p.* 728. The rays are from 5 to 10 in number.

V. LAXA, *DC.*, fere var. BREVIPES, *Gray, Pl. Wright. l. c.* In a ravine, at Santa Cruz, Sonora; Sept. (1228.)—Leaves either opposite or alternate.

FLOURENSIA CERNUA, *DC. Prodr.* 5. *p.* 593; *Gray, Pl. Wright. p.* 114. Valley of the Pecos, on stony hills; May. Hills between the Mimbres and the Rio Grande; Nov. (1229.)

HELIANTHUS LENTICULARIS, *Dougl. in Bot. Reg. t.* 1265; *Gray, Pl. Fendl. p.* 83. Valley of Coppermine Creek, New Mexico; Aug. and Oct. (1230.)

H. PETIOLARIS, *Nutt.; Torr. & Gray, l. c.* Valley of Coppermine Creek; Oct.: two forms. (1231.)

H. PETIOLARIS, var. CANESCENS, *Gray, Pl. Wright. p.* 108. Valley of the Rio Grande, New Mexico; July. (1232.)—The same as No. 335.—There are also specimens of a more silvery-canescent plant, with the lower leaves broadly deltoid-ovate, as long as their petioles; from the Rio Grande, 40 or 50 miles below El Paso, mentioned in *Pl. Wright.* under No. 335, which I know not what to do with, except to refer them provisionally to the same species. (1232^a.)

H. CILIARIS, *DC. Prodr.* 5. *p.* 587; *Gray, Pl. Wright. p.* 108. Prairies of Turkey Creek, Western Texas; May. (1233.)

H. GROSSE-SERRATUS, *Martens*, var. *γ. Gray, Pl. Wright. l. c.* Valley of the Mimbres, New Mexico; Oct. (Two specimens only.)

ACTINOMERIS LONGIFOLIA (sp. nov.): caule glaberrimo tereti exalato; foliis plerumque alternis (nunc oppositis nunc ternis) subsessilibus lineari-lanceolatis elongatis denticulatis reticulatis utrinque hispidulo-scabris; pedunculis corymbosis scabris monocephalis; involucro biseriali, squamis exterioribus linearibus patulis disco convexo longioribus ligulas subæquantibus, interioribus paleis receptaculi referentibus; acheniis ovalibus alatis calvis vel paucis uniaristatis.—Mountains east of Santa Cruz, Sonora; Sept. (1234.)—Stem 2 feet high, from a perennial root, leafy to the top. Leaves 6 or 7 inches long and 4 to 6 lines wide, a few of them opposite or verticillate in threes, thickish, rough, especially above, acute. Peduncles in a simple corymb, or sometimes solitary. Heads in fruit depressed-globose, and 8 or 9 lines in diameter. Paleæ of the receptacle lanceolate, rather obtuse. Achenia almost 3 lines long, smooth, surrounded by a thickish and rather narrow wing, the outer side of which is sometimes more extended at the emarginate summit. Pappus none, or with minute rudiments of the two awns, or occasionally with one short and naked awn.

A. WRIGHTII, *Gray, Pl. Fendl. p.* 85. Margin of mountain torrents, between the copper mines and Conde's Camp, New Mexico; Aug. (1235.)

COREOPSIS CARDAMINEFOLIA, *Torr. & Gray, Fl.* 2. *p.* 346. Old bed of the Rio Grande, 50 miles below El Paso; June. (1236.)

C. Drummondii, *Torr. & Gray, l. c.* var. *Gray, Pl. Wright. p.* 109. — Prairies of the Leona and Nueces, Texas; May. (1237.) — On rocky hills of the San Pedro, Western Texas, were gathered a few specimens, apparently of this species, with large and remarkably thickened achenia.

Cosmos bipinnatus, var. parviflorus. C. parviflorus, *H. B. K.; DC. Prodr.* 5. *p.* 606. Margin of streams, from Barbocomori towards Santa Cruz, Sonora; Sept.: and on mountains near the copper mines, New Mexico; Oct. (1238.) — This is the same as Fendler's No. 447, 448; but with still smaller ligules (only 3 or 4 lines long, pale rose-color). The scales of the outer involucre are lanceolate, but not narrower than in depauperate specimens of the cultivated C. bipinnatus; they are as long as the inner involucre. Although the exterior achenia are short-beaked, the inner are long-beaked; the beaks scabrous. The awns of the pappus are 2, 3, or occasionally 4.

Thelesperma gracilis, *Gray in Kew Jour. Bot.* 1. *p.* 252, & *Pl. Wright. p.* 109. Hills of the Limpio; June: near Frontera; May: and at the copper mines, New Mexico; Aug. (1239.)

T. filifolia, *Gray, l. c.* Coreopsis filifolia, *Hook. Bot. Mag. t.* 3505. Rocky hills of the San Pedro, and of the San Felipe, Western Texas; May. (1230 bis.)

T. (Abuceros) longipes, *Gray, Pl. Wright. p.* 109. Stony hills of the San Pedro and Pecos, Western Texas; May. (1231 bis.)

Bidens fœniculifolia, *DC. Prodr.* 5. *p.* 603? var. acheniis minoribus (2½ lin. longis) scabro-hirsutulis. — Valleys of Sonora, between the San Pedro and Sonoita, along streams; Sept. (1232 bis.) Also gathered by Dr. Gregg, at San Antonio de las Alanzanes. — The achenia are linear-oblong, tetragonal, but much obcompressed, and shorter than those of B. fœniculifolia, as characterized by De Candolle; the heads probably smaller. Perhaps it is an undescribed species.

B. heterophylla, *Ort.? DC. Prodr.* 5. *p.* 597? var. caule ramoso; segmentis foliorum (superiorum) fere integerrimis. — Bed of small streams, in mountain valleys, between the San Pedro and Santa Cruz, Sonora; Sept. (1233 bis.) — I am not able to consult Ortega's figure. Our specimens consist of the upper part of branched stems, apparently of a rather tall herb, in flower. The lower cauline leaves present are pinnately 5 – 7-parted, the upper mostly 3-parted, only a few of the uppermost entire: the segments linear, or very narrowly linear-lanceolate, one or two lines wide, the lateral ones 1 – 2 inches, the terminal 2 – 3½ inches, in length, sparingly denticulate-serrate, or nearly entire. Ligules oblong, 6 or 8 lines in length, yellow.

B. bipinnata, *Linn.* Valley of Coppermine Creek, New Mexico. (1234 bis.) — Depauperate forms.

B. heterosperma (sp. nov.): annua, undique glabra; caule ramosissimo ramisque gracilibus; foliis 1 – 2-ternatipartitis, segmentis anguste linearibus integerrimis nunc 2 – 3-fidis; capitulis paniculatis sparsis breviuscule pedunculatis parvis discoideis; acheniis anguste linearibus tetragonis glabris, extimis brevioribus erostratis aristis 2 brevissimis caducis superatis, interioribus elongatis 2 – 3-aristatis. — Raised from seeds gathered by Mr. Wright near the copper mines, New Mexico. (There are no dried specimens in the collection.) — Plant a foot or two in height, paniculately or corymbosely much branched, leafy. Leaves one to two inches long, including the short and naked petiole, rarely pinnately 5-parted; the upper usually 3-parted, with the segments either entire or 2–3-cleft; the lower ones biternately parted: segments 3 to 12 lines long, and half a line wide. Heads sparsely corymbose-paniculate, 3 lines long, one or two lines wide, rather few-flowered, on peduncles of an inch or less in length. Involucre entirely glabrous; the scales broadly linear, obtuse; the exterior shorter; the inner yellow or yellowish. Exterior achenia 2 lines long, blunt, not broader than the others, their two minute retrosely barbed awns early deciduous: next to these are a few achenia with awns like the innermost, which are 4 or 5 lines long, projecting beyond the disk at maturity, and crowned with two, or sometimes three, retrorsely barbed persistent awns of a line in length.

HETEROSPERMUM TAGETINUM, *Gray, Pl. Fendl. p.* 87, *& Pl. Wright. p.* 110; var. acheniis plerumque omnibus exaristatis. — Mountain-sides at the copper mines; Oct. (1235 bis.) — The lobes of the rather rigid leaves are simple and obscurely and irregularly dotted, as in other plants of this group. Both in the indigenous specimens, and in those raised from their seeds, even the central achenia rarely show even the rudiments of awns. — A few specimens from Ojo de Gavilan have the segments of the leaves often lobed, and the central achenia awned. The want of awns on the short fertile achenia alone distinguishes them, and perhaps not permanently, from H. pinnatum.

GUARDIOLA PLATYPHYLLA (sp. nov.): glaucescens; foliis brevissime petiolatis ovato-rotundis pl. m. cordatis dentatis triplinerviis; involucro cylindrico, squamis oblongis obtusis; ligulis 1–3, tubo glaberrimo, fl. disci 5–7; achenio pilosulo. — Hill-sides, along exsiccated streams, between Barbocomori and Santa Cruz, Sonora; Sept. (1236 bis.) — This is an interesting addition to this well-marked genus, of which three species were characterized in *Pl. Wright. p.* 111. I have it also in cultivation, from seeds communicated by Mr. Wright. The terete stems are about 3 feet high, with many corymbose branches. The leaves are pale and more or less glaucous, thickish in texture, rounded, mostly obtuse, mucronate, subcordate or truncate-cordate at the base, repandly and sometimes strongly dentate with callous mucronate teeth. The larger cauline ones are about 3 inches in length and 2½ or more in breadth; the upper and rameal successively smaller, but otherwise similar; the petioles only 1 to 3 lines long. The other species have much longer petioles, and the base of the leaves inclined to be cuneate. Inflorescence, involucre, &c. nearly as in G. Tulocarpus. Involucre about 5 lines long. Ray-flowers not longer than those of the disk, the slender tube shorter: ligule 3 lines long, obscurely 2–3-toothed, white, as are the disk-corollas and styles. Anthers green. Fertile achenia nearly 3 lines long, obscurely striate, furnished at the base with a sort of tuberosity or cushion-like enlargement on the back, which cannot be called an adherent scale: in the dried state it shrinks away.

SANVITALIA ABERTI, *Gray, Pl. Fendl. p.* 87, *& Pl. Wright. p.* 111. Stony hills and valleys, at the copper mines, New Mexico; Aug. (1237 bis.)

XIMENESIA ENCELIOIDES, *Cav.*, fere δ. CANA, *DC.*; *Gray*, *Pl. Wright. p.* 112. From Eagle Springs to the Rio Grande below El Paso; June. (1238 bis.)

X. ENCELIOIDES, var. NANA: caulibus depressis vel assurgentibus vix spithamæis; ramis monocephalis; ligulis parvis discum vix superantibus; acheniis dense pubescentibus pachypteris. — Around the dwellings of Prairie-dogs (Pseudostoma Ludoviciana), between the Limpio and the Rio Grande; June. (1407.) — Here this dwarf variety abundantly occurs, unmixed with the ordinary state of the species.

VERBESINA PODOCEPHALA (sp. nov.): humilis, hispida; caulibus herbaceis plurimis e basi suffrutescente simplicibus vel simpliciter ramosis teretibus; foliis oppositis oblongo-ovatis serratis tripli-quintuplinerviis reticulatis basi rotundata subsessilibus haud decurrentibus; pedunculo solitario elongato monocephalo; involucro hemisphærico disco breviore biseriali, squamis ovatis, exterioribus 5 foliaceis obtusissimis laxis, interioribus 10 chartaceis subacutis; ligulis circ. 10 oblongis exsertis; acheniis exalatis, radii triquetris muticis, disci inæqualiter biaristatis vel arista unica abortiva. — Mountain valleys between the San Pedro and the Sonoita, and in a ravine at Santa Cruz, Sonora; Sept. (1239 bis.) — Plant 10 to 20 inches high; the stems hirsute or hispid and scabrous, slender, not at all winged. Leaves rather thin in texture, 2-3 inches long, 12 to 20 lines wide, acute or obtuse. Peduncles 6 to 10 inches long. Head nearly half an inch in diameter. Flowers golden-yellow. Ligules linear-oblong, 4 lines in length, usually styliferous and fertile; some of them occasionally sterile or even neutral. Achenia destitute of any coroniform or squamellate pappus: those of the ray obscurely 3-toothed at the angles; of the disk with short and rather stout erect awns. — This is evidently related to V. Capitaneja, *Nees in Linnæa*, 19. *p.* 729, which is only briefly characterized, and is said to have decurrent leaves. Our plant has the aspect of a Gymnolomia, or of a monocephalous Zexmenia, from which the pappus distinguishes it.

ADENOPHYLLUM WRIGHTII (sp. nov.): gracile, scabridum; foliis pinnatipartitis, segmentis 5-11 filiformibus inæqualibus muticis; involucro turbinato 8-12-dentato haud setigero basi parce subulato-bracteato; floribus flavis; ligulis brevissimis apice bifidis; pappo utroque 10-paleaceo, paleis exterioribus brevibus oblongis, interioribus aristato-trifidis, arista media achenio pubescente æquilonga. — Hill-sides near the copper mines, New Mexico; Oct. (1280.) — Herb a span to a foot high, from an annual root, erect, paniculate-branched, with the aspect of a Dysodia. Leaves with sparse lobes which are not broader than the rhachis, beset with a few large dark glands; the lower opposite, the upper alternate. Peduncles 1-2 inches long, furnished with a few subulate bracts; and with 4 or 5 similar ones surrounding the base of the involucre, none of them bristle-bearing. Involucre 3 or 4 lines long, smaller than in Dysodia chrysanthemoides, composed of 8 or the terminal of 10 to 12 lanceolate-oblong glanduliferous scales, which are concreted for three fourths of their length; their membranaceous tips rather obtuse, not awned nor bristle-bearing. Receptacle small, conical, alveolate and fimbrillate. Rays rather shorter than the pappus; the oval ligule shorter than its tube. Lobes of the disk-corolla subulate. Achenia silky-pubescent, or when old glabrate, pentangular. Outer pappus of 10 very short and truncate corneous paleæ, in a single series; the inner of as many alternate and larger paleæ, cleft beyond the middle into three scabrous awns; the middle awn twice the length of the two lateral. — This plant has more of the habit of Lebetina than of Adenophyllum coccineum. Were the three aristiform segments of the inner pappus again trifid, it would be a true Lebetina. Although the paleæ are twice as numerous as in Adenophyllum coccineum, and deeper cleft, I refer it to that genus because it is the older one, and should consider Lebetina merely as a section of it, resting the character mainly on the double pappus.

DYSODIA CHRYSANTHEMOIDES, *Lagasca.* D. fastigiata, *DC.*, excl. syn. Open prairies, on the San Pedro, Sonora; Sept.

HYMENATHERUM (ACIPHYLLÆA) ACEROSUM, *Gray, Pl. Wright. p.* 115. Stony prairies of San Felipe Creek, Western Texas; hills near El Paso; and around the hot springs between the copper mines and the Mimbres, New Mexico. Also heads of the Aqua Prieta, Sonora. (1241.)

H. PENTACHÆTUM, *DC.*, var. (= 362, 363) *Gray, Pl. Wright. p.* 117. H. Berlandieri, *DC.* Rocky hills of the San Pedro and Pecos, Western Texas; May, June. (1242.)

H. TENUIFOLIUM, *Cass.; Gray, Pl. Wright. p.* 118; var.? ramis brevibus; foliorum lobis paucioribus et longioribus; paleis pappi alternis sæpius minoribus vel minus aristatis paucisve fere muticis. — Stony hills near El Paso; March. (1408.) — An early state probably of H. tenuifolium, with the foliage much as in H. pentachætum; also approaching that species in the tendency to a reduction of the alternate paleæ of the pappus.

H. POLYCHÆTUM, *Gray, l. c.*; var. foliorum lobis linearibus; capitulis paucioribus. — Prairies, from Las Playas to the copper mines, New Mexico; Oct. (1243.) — Mixed with this species, as in the former collection, and so like it as to be overlooked in collecting, I find a single specimen of

LOWELLIA AUREA, *Gray, Pl. Fendl. p.* 91, *& Pl. Wright. p.* 118. — The paleæ of the pappus are about 12 in this specimen.

TAGETES MICRANTHA, *Cav. Ic.* 4. *p.* 31. *t.* 352; *DC. Prodr.* 5. *p.* 646. Mountains around the copper mines, New Mexico; Aug., Oct. (1244.) — "Called *Anis* by the Mexicans." The plant, raised from Mr. Wright's seeds in the Cambridge Botanic Garden, exhales a powerful and pleasant odor of Anise, when bruised. The ligules are white ("albicans," *Cav.*), usually solitary, occasionally two, and rarely three, in each head, only 1½ to 2 lines long, nearly entire, 2 – 3-denticulate or 2-lobed at the apex. Disk-flowers 3 to 8. Pappus of two awns and two broad paleæ; the latter unequal, shorter than the disk-corolla, sometimes connate into a sheath inclosing the awns, which are longer than the corolla.

CHRYSACTINIA MEXICANA, *Gray, Pl. Fendl. p.* 93, *& Pl. Wright. p.* 119. Hills at the Big Bend of the San Pedro, Western Texas; May. (1245.)

POROPHYLLUM MACROCEPHALUM, *DC. Prodr.* 5. *p.* 648. — Shaded mountain ravines on the Sonoita, Sonora; Sept. (1246.) — The primordial and lower cauline leaves are linear and linear-lanceolate, successively becoming ovate-lanceolate, an inch long. The upper ones are elliptical and broadly oval, 8 or 10 lines long, about the length of their slender petioles; those of the branches similar, but smaller. There are often a few glands on the face of the leaf, as well as at the obscure repand crenatures. Peduncles, heads, &c. as described by De Candolle; except that the involucre is not quite an inch long, and its scales are scarcely if at all apiculate or mucronate. Achenia pubescent. — This is more closely allied to P. ruderale (which often has pellucid glands on the leaves) than to P. ellipticum.

P. GREGGII, *Gray, Pl. Wright. p.* 120. On the Sonoita near Deserted Rancho, Sonora; Sept. Mountain-sides near Lake Santa Maria, Chihuahua; April. (1247.)

P. SCOPARIUM, *Gray, Pl. Wright. p.* 119. Rocky hills, near El Paso; May. Painted Caves on the San Pedro; July. (1409.)

GAILLARDIA PULCHELLA, *Foug.* Prairies from the Mimbres to the copper mines, New Mexico; July. (1248.)

G. PINNATIFIDA, *Torr.* Stony hills of the Pecos; also from El Paso to Doña Ana, and at the copper mines, New Mexico; Aug. (1249.)

PALAFOXIA HOOKERIANA, *Torr. & Gray.* Sandy banks of the Rio Grande above Frontera, and below San Elizario; July. (1250.) — A smaller form, but with ample rays.

P. CALLOSA, *Torr. & Gray, Fl. 2. p.* 369. Valley of the Pecos; July. (1410.)

FLORESTINA TRIPTERIS, *DC.*, var. *Gray, Pl. Wright. p.* 121. Valley of the Pecos; June. (1251.) — Flowers flesh-color or almost white. The paleæ of the pappus are all very obtuse.

CHÆNACTIS STEVIOIDES, *Hook. & Arn.; Torr. in Stansbury, Rep. p.* 390. Hills near Camp Fillmore, on the Rio Grande, New Mexico; April. (1411.) — The marginal corollas have a somewhat ampliate limb.

HYMENOPAPPUS LUTEUS, *Nutt.; Gray, Pl. Fendl. p.* 97. Stony hills at the copper mines; Aug. (1252.) — The specimens resemble those of Fendler. The scales of the involucre are sometimes tinged with purple at the tips; but the corolla is truly yellow, with the pappus (a line and a half in length) fully as long as its tube.

H. FLAVESCENS, *Gray, Pl. Fendl. p.* 97, *& Pl. Wright. p.* 121: — the form with bipinnately-parted leaves, the lobes narrowly linear. — Valley of the Pecos, on stony hills; June. (1253.) The flowers are pale yellow.

H. FLAVESCENS, var. cano-tomentosus; foliis 2–3-pinnatipartitis, lobis angusto-linearibus confertis; floribus vero flavis. — Sand-hills near Frontera, New Mexico; April, May. (1412.) — The heads are as bright yellow as in H. luteus; but they are smaller, and corymbose, the paleæ of the pappus shorter and more obovate, and the stems leafy.

H. FLAVESCENS, var.? foliis radicalibus et caulinis inferioribus oblanceolatis integerrimis nunc pinnatifidis, lobis majusculis; pappo minore. — Mountain ravine near the Mimbres; Oct. — The root is biennial.

SCHKUHRIA HOPKIRKIA: capitulis 3–4-floris, flore unico sæpius fœmineo, ligula brevissima imperfecta; acheniis obpyramidatis angulis longe villosissimis; pappi paleis 8 conformibus ovatis extus hirtellis nervo valido excurrente breviter aristatis corollam adæquantibus. — Hopkirkia anthemoidea, *DC. Prodr.* 5. *p.* 660. — Raised in the Cambridge Botanic Garden, from seeds collected by Mr. Wright in Sonora. — The cultivated plants are one or two feet high, much branched and bush-like, annual: the cauline leaves pinnately 5 – 7-parted, or the upper 3-parted; the rameal mostly entire, narrowly linear. Involucre somewhat clavate and quadrangular, 3 lines long, nearly equalling the flowers, subtended with one or two small bractlets; the scales 4 or 5, obovate, their scarious tips tinged with purple. Corollas yellow, a line and a half long; those of the hermaphrodite flowers 4 – 5-toothed; that of the solitary female flower when present not longer than the others, and imperfectly ligulate; being 2-lipped, the inner lip small and entire, the outer, or ligule, involute, 2 – 3-toothed at the apex, about the length of the style. Achenia 2 lines in length, more or less villous or glabrate on the four sides, very strongly villous on the angles. Paleæ of the pappus, including the short projecting awn, not longer than the corolla, somewhat erose, the obtuse apex often splitting away from the base of the awn, so as to appear "trifid." — I cannot doubt that this is De Candolle's Hopkirkia, which must be reduced to Schkuhria, as remarked in *Pl. Fendl. p.* 96. The Schkuhria Wislizeni (to which belongs Galeotti's No. 2049), which I there characterized, is to this exactly what S. abrotanoides is to S. octoaristata; and the following, which I unwillingly characterize as a species, differs only in its rather small, entirely nerveless and awnless pappus.

S. Wrightii (sp. nov.): capitulis 3 – 5-floris, flore unico fœmineo, ligula brevissima imperfecta; acheniis ad angulos villosissimis; pappi paleis 8 obovato-oblongis conformibus enerviis muticis corolla paullo brevioribus. — On the Sonoita near Deserted Rancho, Sonora; Sept. (1254.) — This is to Schkuhria Hopkirkia and S. Wislizeni exactly what S. isopappa, *Benth.* is to S. octo-aristata and S. abrotanoides. It is therefore highly probable that the difference in the pappus, although constant in the specimens, is not of specific importance; and that the three Peruvian species should be viewed as forms of S. abrotanoides, and our three Mexican plants as analogous forms of S. Hopkirkia. S. virgata, *DC.*, with its very unequal pappus and nearly naked achenia, is distinct from either.*

Bahia absinthifolia, *Benth.*, var. dealbata, *Gray*, *Pl. Wright. p.* 121. Sandy valley in the Mimbres mountains; July: near Frontera; March. (1255.)

B. biternata (sp. nov.): annua, cinereo-puberula; caule erecto gracili superne corymboso-paniculato, ramis oligocephalis; foliis alternis petiolatis biternatisectis, segmentis linearibus obtusis sæpius 2 – 3-lobatis; involucro laxo disco breviore, squamis 12 obovatis obtusis; acheniis hirsutis; pappo e paleis 12 – 14 uninerviis, fl. exteriorum obovatis muticis tubum corollæ adæquantibus, fl. interiorum oblongo-lanceolatis aristatis corolla subdimidio brevioribus. — Gravelly hills near Ojo de Gavilan, New Mexico; Aug. (1256.) — Plant one or two feet high, loosely and paniculately branched; the heads corymbose, on peduncles of an inch or less in length. Segments and lobes of the leaves a line or less in width. Involucre as in B. ambrosioides and B. pedata; the scales about 3 lines in length, membranaceous.

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* Achyropappus anthemoides, *H. B. K.* is wholly intermediate between Schkuhria and Bahia, *Lag.*, and will certainly fall into the one or the other genus.

Ligules 8 or 10, broadly obovate, 3-lobed at the apex, bright yellow, as are the numerous disk-flowers. Pappus of the ray and exterior disk-flowers entirely muticous and obtuse, about half the length of the achenium; of the inner disk-flowers, including their rather short scabrous-denticulate awn, almost as long as the achenium. The pappus of some of the intermediate flowers is intermediate in character. — This plant so much resembles Bahia pedata, No. 387 of Wright's former collection, that I was about to pass it as a variety of that species, with more dissected leaves, when I observed the elongated and awned paleæ of the pappus of all the inner flowers. This is an anomaly in the genus: none of the species except B. pedata show even a manifest midnerve to the pappus.

B. PEDATA, *Gray*, *Pl. Wright. p.* 123. Hills between the Limpio and Ojo de Leon; June. (The original specimens, No. 387, were gathered on the Limpio.) — The few specimens collected the present season are stouter than those of 1840; the leaves with larger, broader, and more incised or lobed segments. It still more resembles the following plant; from which the obtuse and fewer scales of the involucre, as well as the pappus, distinguish it.

VILLANOVA CHRYSANTHEMOIDES: puberula, glabella; caule erecto superne paniculato; ramis floridis pedunculisque subcorymbosis viscoso-glandulosis; foliis alternis 1 – 2-ternatipartitis, segmentis 2 – 3-lobatis seu pinnatifidis, lobis oblongis vel sublinearibus obtusis; involucri squamis subtriseriatis æqualibus acuminatis; ligulis 16 – 20 ovali-oblongis; fl. disci multis. — Amauria? dissecta, *Gray*, *Pl. Fendl. p.* 104. — Sides of mountains, at the copper mines, New Mexico; Oct. (1257.) — Stems one to four feet high. Leaves all alternate; the larger ones 2 to 4 inches in diameter, glabrous or nearly so. Heads half an inch in diameter, exclusive of the ligules, which are 5 lines long. Flowers all yellow. Scales of the involucre 16 to 20, herbaceous; the exterior lanceolate; the inner oblong-obovate and conspicuously acuminate. Corollas, especially the tube, beset with very glandular short hairs. Branches of the style in the disk-flowers tipped with a short and obtuse cone. Receptacle rather convex. Achenia quadrangular, subclavate, nearly glabrous, striate, all fertile. — This plant is to Bahia proper what the original species of Villanova are to Achyropappus. There is nothing but a larger number of flowers in the head to distinguish it from Villanova, with which it accords very well in habit.

AMBLYOLEPIS SETIGERA, *DC. Prodr.* 5. *p.* 668; *Gray*, *Pl. Wright. p.* 121. Prairies of the Leona, Western Texas; May. (1258.)

RIDDELLIA TAGETINA, *Nutt.*; *Torr. in Emory*, *Rep. t.* 5; *Gray*, *Pl. Fendl. p.* 93. Alluvial soil along the San Pedro, Western Texas; May. (1259.)

ACTINELLA RICHARDSONII, *Nutt.*; *Torr. & Gray*, *Fl.* 2. *p.* 381; *Gray*, *Pl. Fendl. p.* 101. Stony hills at the copper mines, New Mexico; Aug. (1260.)*

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* On the Mimbres, in the spring of 1851, Dr. J. M. Bigelow gathered specimens of Actinella argentea, *Gray*, *Pl. Fendl. p.* 100. In the same region he likewise discovered another well-marked species, viz.: —

ACTINELLA BIGELOVII (sp. nov.): caulescens, floccoso-lanata, demum glabrescens; caulibus e rhizomate perenni erectis simplicibus striatis apice longe aphyllis scabris monocephalis; foliis angustissime

A. ODORATA, *Gray, Pl. Fendl. l. c., & Pl. Wright. p.* 122. Along the Rio Grande near El Paso; May, in flower; July, in fruit. (1261.)

A. SCAPOSA, *Nutt.; Torr. & Gray, Fl.* 2. *p.* 382: the villous form. Stony prairies, near Rock Creek and Escondido Springs; June. (1262.)

A. LINEARIFOLIA, *Torr. & Gray, l. c.* Rocky hills along the Pecos, and at Escondido Springs; June. (1263.)

A. LINEARIFOLIA, var. caule elatiore (ultrapedali) strictiore. — Prairies of the Leona, Western Texas; May. (1264.)

HYMENOTHRIX WISLIZENI, *Gray, Pl. Fendl. p.* 102, *adnot.* Valley of the Sierra de los Animos, south of the copper mines, New Mexico; Oct. (1265.) "Also common in Sonora." — The specimens well accord with that of Wislizenus. I think the root is perennial. The disk-corollas are moderately 5-lobed; the anthers partly exserted, and yellow, like the flowers. The achenia are 4 – 5-angled, and minutely hairy. The pappus is correctly described in *Pl. Fendl. l. c.*, except that the paleate portion is mostly rather longer than the awn. — The following plant, with the involucre and pappus of Hymenothrix, might well claim the rank of a genus, on account of its rayless capitula, with the limb of the corolla parted to the base.

& slightly unequally
C.W.
as is said in the
original character,
A.G.

H.? WRIGHTII (sp. nov.): floribus purpurascentibus; ligulis nullis; corollis fl. hermaphroditis limbo 5-partito, lobis oblongo-linearibus; acheniis villosis; paleis pappi 15 – 18 lanceolatis nervo valido in aristam breviusculum desinente; foliis inferioribus 2 – 3-ternatisectis, superioribus trisectis segmentis lineari-filiformibus integerrimis. — On hills between the Barbocomori and Santa Cruz, and on the side of the Chiricahui Mountains, Sonora; Sept. (1266.) — Root perennial. Stems glabrous, rigid, corymbosely branched, 2 or 3 feet high. Lower leaves biternately divided and more or less hirsute; the others glabrous: segments of the upper leaves an inch or more in length, and less than a line in width. Peduncles or branches of the loose corymb glandular, or entirely glabrous. Heads 4 or 5 lines in length, about 30-flowered. Involucre shorter than the disk, glabrous, biserial; the exterior scales 4 or 5, linear and smaller; the inner about 7, obovate or oblong, partly scarious, tinged with purple. Corolla pale purple; the limb 5-parted nearly to the summit of the glandular tube; the lobes oblong-linear, spreading, a line and ? a half in length, equal, or in some of the marginal flowers more or less) irregular from the partial union of two of the lobes. Anthers purple, wholly exserted, tipped with an ovate appendage, bidentate at the base. Branches of the style flat, linear, like those of H. Wislizeni, except that the conical appendage is subulate-pointed. Receptacle small and nearly flat, tuberculate, naked. Achenia quadrangular, tapering to the base, villous. Puppus rather longer than the achenia, shorter than

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linearibus rigidis integerrimis paucisve caulinis trilobis; involucri squamis oblongo-lanceolatis acuminatis, interioribus acuminatissimis inferne scarioso-marginatis; pappi paleis lanceolatis sensim aristato-acuminatissimis (nervo evanido) corollam disci subæquantibus. — On mountains near the copper mines, and near the Mimbres, New Mexico; April, June. — Stems slender, 8 to 12 inches high. Radical leaves cæspitose, 2 to 3 inches long, barely a line wide, the cauline several on the lower half of the stem, similar, or some of the larger ones furnished with a short lobe on each side above the middle. Head and ligules nearly as large as those of A. argentea. Paleæ of the pappus 3 lines long.

the corolla, composed of 15 to 18 linear-lanceolate hyaline paleæ (which are broader than in H. Wislizeni), with a very strong hispid midrib, produced at the apex into a short hispid-barbellate awn. The aspect of the heads in fruit is something like those of Petalostemon corymbosum.

GALINSOGA PARVIFLORA, *Cav.*, var. CARACASANA. Vargasia Caracasana, *DC. Prodr.* 5. *p.* 676. Valley of Coppermine Creek, New Mexico; Aug., Oct. (1267.) — The achenia of the ray are slighly hairy near the summit, and furnished with a very small setiform pappus, as De Candolle characterized Vargasia, much more reduced than in the figure in *Deless. Ic. Sel.* 4. *t.* 47.

G. PARVIFLORA, var. SEMICALVA: acheniis radii glaberrimis calvis. — Side of mountains, at the copper mines; Oct. (1268.)*

BAILEYA MULTIRADIATA, *Harv. & Gray, Pl. Fendl. p.* 106; *Torr. in Emory, Rep. p.* 144. *t.* 6. Valleys between Eagle Springs and the Rio Grande; and on the Mimbres; July. Near El Paso, abundant; April, May. (1269.)

B. PLENIRADIATA, *Harv. & Gray, l. c.* Valleys west of Chiricahui Mountains, Sonora; Sept. (1270.)

ACHILLEA MILLEFOLIUM, *Linn.* Mountain ravine near the Mimbres; Oct. (1271.)

ARTEMISIA DRACUNCULOIDES, *Pursh.; Gray, Pl. Wright. p.* 124. Hills, around the copper mines, New Mexico; Oct. (1272.)

A. FILIFOLIA, *Torr.* Valley of Coppermine Creek; Oct. (1273.)

A. CANADENSIS, *Michx.; Torr. & Gray, Fl.* 2. *p.* 417. Hills and valleys around the copper mines; Aug., in flower; Oct., in fruit. (1274.) — A form with the radical leaves canescent.

A. LUDOVICIANA, *Nutt.; Torr. & Gray, l. c.* Side of mountains at the copper-mines; Oct. Also on mountains near Conde's Camp; Sept. (1275.) Also a small-leaved and very canescent form, like Wright's No. 391. (1276.)

A. LUDOVICIANA, var. foliis lobisve lineari-lanceolatis supra glabratis. — Valleys near the copper mines; Oct. (1277.) — A form resembling Lindheimer's No. 442, and approaching that called A. Mexicana.

A. LUDOVICIANA, var. MEXICANA, forma tenuifolia. — Mountains around the copper mines; Oct. (1278.) — Lobes of the leaves finer, and the involucre less pubescent, than in Lindheimer's No. 444, which I cannot specifically distinguish from A. Ludoviciana. — Collected with the above is a plant with similar and canescent leaves on the sterile shoots; but those of the fertile stems glabrate, pinnately 3 5-parted, with the lobes and rhachis nearly filiform. (1279.)

GNAPHALIUM PALUSTRE, *Nutt.; Torr. & Gray, Fl. 2. p.* 427. Sandy banks of the Rio Grande above El Paso; July. (1280.)

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* The following is a New Mexican representative of a Californian and Oregon genus: —

LAYIA (MADAROGLOSSA) NEO-MEXICANA (sp. nov.): hispida, parce glandulosa; foliis linearibus integerrimis; ligulis trifidis albis; acheniis radii pappo parvo paleaceo subdimidiato laciniato coronatis, disci parce pilosis; cæt. fere L. glandulosæ. — Near Santa Barbara, New Mexico, Aug., *Dr. J. M. Bigelow.* (Communicated by Dr. Torrey.) — This might, perhaps, have been taken for Layia glandulosa, if it were not for the constant presence of a pappus in the ray-flowers; in which respect it differs not only from the rest of the genus, but from the sole distinguishing character of the division *Madieæ*. The character of the genus and of the section Madaroglossa must accordingly be extended in this particular.

G. LUTEO-ALBUM, *Linn.* Sandy bars of the Nueces, Texas; also on the Pecos, and the Rio Grande, near El Paso. (1281.)

G. SPRENGELII, *Hook. & Arn.; Gray, Pl. Wright. p.* 124. Hills, near Cooke's Spring, between the Rio Grande and the Mimbres; Nov. (1282.) — Also (a large form) on hills around the copper mines (1283), and in valleys of Sonora (1284).

G. MICROCEPHALUM, *Nutt.; Gray, Pl. Wright. p.* 124. Mountains near the copper mines: a single specimen only gathered.

G. LEUCOCEPHALUM (sp. nov.): caulibus e basi herbacea plurimis erectis simplicibus cano-lanatis; foliis anguste linearibus acutissimis basi breviter decurrentibus supra viridibus pube brevissima subglandulosa scabridis subtus cano-lanatis; capitulis in corymbum densum polycephalum congestis; involucri campanulati squamis (basi angustata tomentosa exclusa) ovatis oblongisve obtusis glabris candidis. — G. polycephalum, *Gray, Pl. Wright. p.* 124. *no.* 393, non *Michx.* — Bed of mountain torrents near Santa Cruz, Sonora; Sept. (1285.) — Stems one or two feet high, leafy to the top, puberulent-glandular under the coat of wool, terminated by a dense compound corymb. Leaves 2 or 3 inches long, only a line and a half wide, about the same breadth at the manifestly decurrent base. Heads more than 50-flowered, the hermaphrodite flowers few in the centre. Involucre 3 lines in length and breadth; the scales bright white, all (except perhaps the outermost) obtuse. — This is manifestly different from G. polycephalum, to which I wrongly referred the specimens gathered in 1849. It is more closely related to G. leptophyllum, which has straw-colored or fuscous and lanceolate scales of the involucre.

CACALIA DECOMPOSITA (sp. nov.): glabrata; caule longe subaphyllo apice corymboso polycephalo; foliis 3 – 4-pinnatisectis, segmentis linearibus; petiolo basi vaginante; involucro 5 – 6-phyllo 5 – 6-floro basi vix bracteolato; pappo corollam subæquante. — Mountains, east of Santa Cruz, Sonora; Sept. (1286.) — Stem 3 feet high, terete, floccose-woolly at the base and at the base of the petioles, otherwise nearly glabrous, bearing one or two very large leaves (6 – 12 inches long and little less broad) at the base, naked above, or with one or two small but similarly dissected leaves, those which subtend the branches of the compound corymb reduced to bracts. Segments of the leaves 6 to 18 lines long, a line to a line and a half wide, entire, or with one or two lobes; the rhachis not toothed. Pedicels pubescent. Heads half an inch long; the involucre about half that length. Achenia thick. Corolla apparently flesh-color.

SENECIO LOBATUS, *Pers.; Torr. & Gray, Fl.* 2. *p.* 437. Banks of the Rio Grande, near El Paso; and banks of the Rio Santa Maria, Chihuahua; April, May. (1413.)

S. TAMPICANUS, *DC. Prodr.* 6. *p.* 427; *Gray, Pl. Wright. p.* 125. Hills on the Limpio; June. (1287.)

S. FILIFOLIUS, *Nutt. β.* FREMONTI, *Torr. & Gray, Fl.* 2. *p.* 444. Stony prairies of the Leona and Nueces, Texas; May. (1288.)

S. LONGILOBUS, *Benth.*, var. floccoso-lanatus, mox glabrescens. — Valley of the Rio Grande, near El Paso; April. (1414.) — Between No. 399 and No. 400.

S. FASTIGIATUS, *Nutt.; Torr. & Gray, l. c.* Ravines between the copper mines and the Mimbres, New Mexico; Oct. (1289.) — A low form, exactly agreeing with a specimen from Nuttall, except that the cauline leaves are repandly toothed in several specimens. It probably passes into S. canus, *Hook.*

S. AUREUS, *Linn.*, var. BOREALIS, *Torr. & Gray*, *Fl. l. c.*, verging towards a stout and floccose form of var. Balsamitæ (S. Plattensis, *Nutt.*). Sides of the Organ Mountains, northeast of El Paso; April. (1415.)

PSATHYROTES SCAPOSA (sp. nov.): spithamæa, arachnoideo-lanuginosa; foliis fere omnibus radicalibus rotundo-ovatis subcrenatis basi trinerviis petiolatis; scapo glanduloso sæpe diviso 2 – 10-cephalo; involucri multiflori squamis estriatis oblongo-lanceolatis. (Tab. XIII.) — Stony hills above El Paso; May: also near Lake Santa Maria; April. (1416.) — Root slender, biennial or annual, producing from one to several scapes or nearly leafless flowering stems, from 3 to 6 inches high, which are glandular and viscid, as are the peduncles and heads. Leaves all radical, or approximated on very short and forking stems (the subcauline ones alternate), 6 to 18 lines long, obtuse, obscurely or irregularly crenate, or entire, abruptly contracted into a petiole as long as the blade, clothed, as well as the base of the stem, with a loose and white arachnoid tomentum, which is partially deciduous with age, under which the surface is more or less viscid. Bracts, subtending the peduncles or branches of the scape, inconspicuous and linear, one or two lines long. Heads subcorymbose, 4 lines long. Involucre of about 16 equal oblong-lanceolate scales, which are nearly in a single series, membranaceous but greenish, flat, not striate, obscurely veiny by transmitted light, rather obtuse, viscid-pubescent, shorter than the flowers. Receptacle nearly flat, naked. Flowers 30 to 40, all similar and tubular; the corolla light yellow, viscid. Style nearly as in Arnica. Achenia turbinate, obscurely pentangular, villous. Pappus shorter than the achenia, and only about half the length of the corolla, fine and capillary, copious, the bristles very unequal in length, rather rigid, scarcely at all denticulate even under a strong lens, persistent. — In *Plantæ Wrightianæ, p.* 86, among the species to be excluded from Brickellia, the Bulbostylis annua of Nuttall is mentioned as an obscure plant of uncertain genus, either of Asteroideæ or Senecionideæ. Of it I have seen only a poor specimen in the Hookerian herbarium, from which I took some florets for examination; which show that it and the plant now under consideration are undoubted congeners. As they cannot be associated with any genus known to me, I merely raise to generic rank the section under which Nuttall characterized his Bulbostylis annua, changing a single letter in the termination of the name, that it may correspond to the Greek word (ψαθυρότης) from which he derived it.* The name has no particular applicability to the present species (the stems of which are by no means brittle or fragile), nor apparently to Nuttall's plant either. The genus may be provisionally referred, I think, to the Senecionideæ of the subtribe Senecioneæ.

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* PSATHYROTES. (Bulbostylis § Psathyrotus, *Nutt.*)

Capitulum homogamum multiflorum; floribus tubulosis. Involucrum 1 – 2-seriale, squamis æqualibus. Receptaculum nudum, fere planum. Corolla cylindraceo-infundibularis, tubo proprio brevissimo, limbo 5-dentato. Antheræ elongatæ, demum exsertæ, ecaudatæ. Styli rami subcompressi, lineis stigmaticis obscuris percursi, extus hirtelli, cono inconspicuo terminati. Achenia oblongo-turbinata, villosa. Pappus pilosus, corolla dimidio brevior, parum copiosus; setis tenuibus rigidulis vix scabris valde inæqualibus. — Herbæ Neo-Mexicanæ monocarpicæ, nanæ, glanduloso-viscosæ; foliis alternis ovatis vel cuneatis; floribus pallide flavis.

1. P. ANNUA. Bulbostylis (Psathyrotus) annua, *Nutt. in Jour. Acad. Philad. n. ser.* 1. *p.* 179.
2. P. SCAPOSA. Vide supra.

CIRSIUM WRIGHTII (sp. nov.): caule elato (3 – 9-pedali) superne corymboso-paniculato polycephalo; foliis cum ramis utrinque tenuiter arachnoideo-lanuginosis demum glabrescentibus, radicalibus magnis profunde pinnatifidis in petiolum superne lobulatum inferne spinosum attenuatis, caulinis pinnatifido-sinuatis basi attenuatis in caulem leviter decurrentibus dentibus marginibusque spinulosis, ramealibus parvis sensim ad bracteas subulatas reductis; capitulis nudis parvulis; involucri hemisphærici squamis subulatis appressis cuspidato-apiculatis; corollis carneis vel ochroleucis. — C. altissimum, var. *Gray, Pl. Wright. p.* 125. *no.* 406. — Around springs near San Bernardino, on the borders of New Mexico and Sonora; Oct. (1290.) — A tall species, which in the former collection I took for a variety of C. altissimum. From that it obviously differs in the thin and cobwebby, and rather deciduous pubescence, the naked peduncles and heads, as well as in the shorter and hemispherical involucre, the scales of which are barely callous-pointed, but not spinescent. It should stand next to C. muticum, which has a differently shaped involucre, with broader and blunter scales, shorter peduncles, more divided leaves, &c. The radical leaves of C. Wrightii are about two feet long; the cauline a foot or more in length; those of the flowering branches one or two inches, or still smaller. Heads barely an inch in length.

C. VIRGINIANUM, *Michx.* var. γ. *Torr. & Gray, Fl.* 2. *p.* 458. Low and grassy flats around Escondido Springs, between the Pecos and the Limpio; June. (1291.)

C. UNDULATUM, *Spreng.; Torr. & Gray, l. c.; Gray, Pl. Wright. p.* 125. Prairies from Howard's Creek, Western Texas, to the Limpio; May. (1292.) — Two or three forms. One or two very spinose specimens make a transition to C. ochrocentrum. Also, with smaller heads, on Coppermine Creek; Oct. (1293.) Another variety, with numerous lanceolate lobes to the elongated leaves, was gathered between the Barbocomori and Santa Cruz, Sonora. (1294.)

C. OCHROCENTRUM, *Gray, Pl. Fendl. p.* 110. Sandy banks of the Rio Grande above Doña Ana; Sept. (1295.) — The leaves are perfectly crowded with long, yellowish spines, and similar spines tip the scales of the involucre. Yet I fear it is only an extreme form of the polymorphous C. undulatum.

C. NEO-MEXICANUM (sp. nov.): foliis lanceolatis seu oblongo-linearibus sinuato-pinnatifidis spinosis utrinque cauleque arachnoideo-lanatis incanis, caulinis basi angusta spinosa decurrentibus, radicalibus subpetiolatis; capitulis solitariis vel subcorymbosis subglobosis erectis; involucro arachnoideo-lanato, squamis lanceolatis, exterioribus apice foliaceo patulo vel recurvo in spinam subulato-productis, intimis linearibus acuminatis fere inermibus. (C. canescens, *Gray, Pl. Fendl. p.* 110? haud *Nutt.*, is probably a variety of this, with smaller and more numerous heads, and less spreading involucral scales.) — Side of the Organ Mountains, northeast of El Paso; April. (1417.) — "Stem 2 – 4 feet high, somewhat branching"; the branches usually monocephalous. The whole plant is covered with a white wool, which is looser and more arachnoid than in C. undulatum; and the upper surface is found to be smooth when the woolly covering is rubbed off. The involucre, also loosely woolly, is about an inch and a half in diameter, not bracteate; the scales with a chartaceous or coriaceous and appressed base; and all but the innermost with a foliaceous-acuminate and spine-tipped entire appendage, which is widely spreading, or the exterior scales reflexed. This should be compared with Cirsium Mexicanum, *DC.* (but it is wholly unlike C. lanceolatum) and with C. cernuam, *Lag.* The involucre most resembles that of C. heterolepis, *Benth.* (to which belongs, I believe, No. 467 of Coulter's Mexican collection), but it is smaller and less foliaceous.

C. GRAHAMI (sp. nov.): caule 3 – 5-pedali apice parce ramoso; ramis monocephalis; foliis subtus cano-lanuginosis supra leviter arachnoideis mox nudis minute viscoso-hirtellis lanceolatis sinuatis vel subpinnatifidis spinuloso-ciliatis lobis dentibusve breviter spinosis, caulinis semiamplexicaulibus haud decurrentibus; involucro subgloboso basi bracteolis 2 – 3 parvis instructo, squamis coriaceis appressis glabratis lanceolatis spinula brevissima apiculatis; corollis intense purpureis. — Low grounds, in valleys between the Sonoita and the San Pedro, Sonora; Sept. (1296.) — Radical leaves over a foot in length and three inches wide; those of the elongated flowering branches one to three inches long; the uppermost linear. Head an inch and a half in length. Scales of the involucre barely spinulose-mucronate or cuspidate. Flowers very bright and deep purple. The nearly muticous involucre, the deep purple flowers, and the leaves bare and green above, principally distinguish this from some forms of C. undulatum, which moreover grows in high and dry ground. It is named in honor of Col. J. D. Graham, under whose auspices the collection was made.

PEREZIA RUNCINATA, *Lagasca; Gray, Pl. Wright. p.* 125. Stony hills of the Pecos and San Felipe Creek, Texas; May, July. (1297.)

P. NANA, *Gray, Pl. Fendl. p.* 111, *& Pl. Wright. l. c.* Along branches of the San Pedro, Sonora; Sept. Stony hills, near El Paso; March. (1418.) — "Plant very sweet-scented in drying."

P. WRIGHTII, *Gray, Pl. Wright. p.* 127. Prairies along the Rio Frio, Western Texas; May. (1298.)

TRIXIS ANGUSTIFOLIA, *DC. Prodr.* 7. *p.* 69; *Gray, Pl. Wright. p.* 128; var. foliis lato-lanceolatis sæpe denticulatis. — Ravines, at Santa Cruz, Sonora; Sept. Mountains near El Paso; May. (1299.) — The leaves are very much wider than in Gregg's specimens; those of Wright's former collection are intermediate in their form.

LERIA NUTANS, *DC. Prodr.* 7. *p.* 42. Comanche Creek, Western Texas; May.

CALAIS LINEARIFOLIA, *DC.; Torr. & Gray, Fl.* 2. *p.* 471. Shore of Lake Gusman, Chihuahua. Also sandy hills, Camp Fillmore, and on the adjacent Organ Mountains, New Mexico; April. (1419.) — The specimens accord well with the Californian plant, except that the scales of the involucre are scarcely so much acuminate, and the achenia rather less beaked; — differences which do not appear to be of specific importance. As in the Californian plant, the leaves are either glabrous or pubescent; and either entire, or with a few spreading teeth, or laciniate-pinnatifid. In some of the exterior, chiefly sterile flowers, the awns of the pappus are as long as the palea.*

PINAROPAPPUS ROSEUS, *Less.*, *DC. Prodr.* 7. *p.* 99. Stony hills of the San Felipe, Western Texas. (1420.)

RAFINESQUIA NEO-MEXICANA (sp. nov.): humilis; foliis runcinato-pinnatifidis; involucri squamis propriis 7 – 8 lanceolatis uniseriatis; acheniis breviuscule rostratis, exterioribus cinereo-pubescentibus, intimis glabris; pappo albo, setis rigidulis. — Stony hills along the Rio Grande near El Paso, abundant; March, April. (1421.) — Plant from 3 to 12 inches high, branching, from a slender monocarpic root (which probably originated from the seed late in the autumn previous), rather slender, entirely glabrous. Leaves slightly fleshy, one to two inches long; the radical obovate or oblong, barely toothed; the cauline lanceolate or linear, auriculate-clasping at the base, and pinnatifid, with few or several oblong or linear spreading or somewhat recurved lobes; the uppermost linear and entire, gradually reduced to small bracts. Heads solitary, terminating the branches. Involucre an inch long, cylindraceous, tapering upwards, or elongated-conical, composed of about 10 short ovate-acuminate calyculate scales, and of 7 or 8 elongated lanceolate membranaceous scales, tapering to a point, as long as the disk; all somewhat united and thickened at the base. Receptacle flat, naked, areolate. Flowers from 15 to 18, all fertile and similar. Ligules rose-color, or nearly white above and purple underneath. Achenia terete, obscurely 5-ribbed, tapering from the base (the large areola of insertion basilar) upwards, and prolonged into a not very slender beak, which is about half the length of the body of the achenium; the exterior canescently pubescent; the innermost glabrous and smooth, or very nearly so. Pappus bright white, composed of 10 or 12 rather rigid setæ (like those of Scorzonera), about the length of the achenium, and conspicuously and densely plumose from the base to a little below the capillary apex. — This handsome vernal plant appears to be a genuine congener of the Rafinesquia Californica of Nuttall, notwithstanding the shorter and stouter beak to the fruit, and stronger, more paleolate bristles of the pappus.

STEPHANOMERIA MINOR, *Nutt.; Gray*, *Pl. Wright. p.* 128. Alluvial soil on the Pecos; June. (1300.)

S. RUNCINATA, *Nutt.; Gray*, *Pl. Fendl. p.* 112. Jamesia pauciflora, *Nees! in Neuwied Trav. App. p.* 16. Hills near El Paso; May. (1422.) — "Flowers purple."

S. RUNCINATA, *Nutt.*, var. caulibus elatioribus (1 – 2-pedalibus); ramis paniculatis; foliis tenuioribus. — Pebbly bed of Howard's Creek, Western Texas; May. (1301.)

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* Hymenonema? glaucum, *Hook. Fl. Bor.-Am.* 1. *p.* 300, judging from the imperfect original specimen, is not the Calais macrochæta, *Gray*, *Pl. Fendl.*; but a Scorzonella; perhaps the entire-leaved state of S. laciniata.

CALYCOSERIS, *Nov. Gen.*

Capitulum liguliflorum multiflorum. Involucrum campanulatum, duplex, interius e squamis circa 12 lineari-lanceolatis margine scariosis subuniseriatis; exterius calyculiforme, e squamis totidem brevibus laxis. Receptaculum planum, paleis tenuissimis piliformibus inter flores onustum. Achenia conformia, fusiformia, crasse 5 – 6-costata, muricato-scabra, apice attenuato-rostrata. Pappus duplex; exterior coroniformis persistens; interior pilosus, copiosus, setis mollibus niveis vix scabris basi in annulum concretis caducis. — Herba monocarpica, humilis, glabra; caule a basi ramoso; foliis pinnatipartitis, lobis rhachique linearibus; pedunculis breviusculis monocephalis ante anthesin nutantibus cum involucri basi hispido-glandulosis; floribus roseis.

Calycoseris Wrightii. (Tab. XIV.) — Stony hills around El Paso, abundant; March, April. (1423.) — Plant about a span high, from a slender simple root, branched from the base; the branches or stems ascending, sparsely leafy, sparingly setose-glandular towards the summit. Leaves glaucescent, linear, and with few or several spreading linear lobes from 2 to 5 lines in length; the terminal lobe prolonged. Involucre half an inch long, externally sparsely beset, like the peduncle, with nail-headed glandular setæ. Ligules pale rose-color, marked with deeper purple underneath, half an inch long. Receptacle flat, about 25-flowered, areolate, each flower subtended by a delicate capillary bristle in place of a palea: these bristles, which may perhaps be compared with those of the receptacle of Andryala, are persistent, though rather fragile, and as long as the achenia. Achenia all alike, 2½ lines long, terete, with 5 or 6 broad ribs separated by narrow grooves, tuberculate-roughened, tapering gradually into a thickish beak which is rather shorter than the body of the achenium, its dilated apex crowned with the hyaline crateriform outer pappus, the edge of which is even, but multidenticulate. Inner pappus pilose, bright white, consisting of copious and equal, scarcely denticulate, soft bristles, all rather firmly united into a ring at the base and deciduous together. — This well-marked genus (as well as Anisocoma, *Torr. & Gray in Bost. Jour. Nat. Hist.* 5. *t.* 13, which agrees with it in having an exterior coroniform pappus) will hardly find a place in any of De Candolle's subtribes, as they now stand. Disregarding this peculiar character of the pappus, Calycoseris would fall into Rodigieæ, if the setæ of the receptacle be taken for true paleæ. But if they are of the same nature as those of Andryala, the genus might be placed near Crepis and Malacothrix. However, it is hardly worth while to speculate upon its appropriate place until the whole tribe has undergone revision.

Malacothrix Fendleri: nana, glabrata; caulibus e radice exili plurimis diffusis; foliis junioribus parce arachnoideis, radicalibus runcinato-pinnatifidis dentatisve lobis cuspidato-mucronatis, caulinis paucis linearibus, summis integerrimis; acheniis fere cylindricis æqualiter multicostatis apice manifeste cupulato integerrimo; pappi seta unico validiore lævi subpersistente, cæteris scabris inferne barbellulatis caducis. — M. sonchoides, *Gray, Pl. Fendl. p.* 113, non *Torr. & Gray.* — Stony hills around El Paso, &c., abundant; March, April. (1424.) — The habit

and aspect of this plant are almost exactly as in M. sonchoides, with which I formerly confounded it. That species, however, as stated by Dr. Torrey (*Appendix to Stansbury's Report*, p. 392), has five stronger and persistent bristles to the pappus. The achenium, moreover, is strongly angled with five thick and equidistant ribs, which are much larger than the others (two in each interval), and alternating with the stronger setæ of the pappus; and its apex is very minutely denticulate, but not produced into a cup or distinct border. In M. Fendleri, the ribs of the brownish achenium are slender and all alike, and its apex is continued into a decided cup, with an even edge, within which the row of minute denticuli, like persistent bases of the setæ of the pappus, are concealed; and only one (sometimes two?) of the rays of the pappus is stronger and persistent. — The Californian plant of Coulter's collection, which I also inadvertently referred to M. sonchoides, is doubtless M. obtusa, *Benth.;* likewise gathered by Dr. Parry, at Monterey. In this the achenia, in Parry's specimens, are tapering to the base, somewhat angled, but evenly multistriate, and with scarcely any apical border; the pappus is wholly deciduous in a ring; and I find no stronger and naked bristles. — Dr. Torrey indicated to me an analogous structure in the pappus of Sonchus, in which four or five of the inner bristles of the pappus are much stronger than the soft and delicate exterior pappus. This, I find, has been duly noticed by C. H. Schultz, in the *Phytographia Canariensis* of Mr. Webb.

PRENANTHES? EXIGUA (sp. nov.): caule 3 – 4-pollicari ramosissimo; pedunculis divaricatis; foliis radicalibus caulinisque oblongis vel obovatis basi attenuatis spinuloso-dentatis nunc sinuatis, ramealibus ad bracteas minimas reductis; involucro tetraphyllo quadrifloro; acheniis 5-sulcatis scabriusculis pappo rigido sublongioribus. — Stony hills above El Paso; April. (1425.) — Root simple, annual or biennial. Leaves 6 to 10 lines long, glabrous. Stem soon deliquescent into a diffuse and corymbose compound panicle. Involucre 2 lines long, subtended by a minute bract, like those of the peduncles and branchlets; the scales oblong-lanceolate. Ligules short; the color not known, probably flesh-colored. Achenia cylindrical, scarcely narrowed at the base, truncate at the apex, the surface occupied by five very broad and flat ribs, separated by narrow grooves, minutely scabrous. Pappus bright white, of copious and very unequal bristles, which are unusually stiff and rigid, slightly thickened downwards, minutely scabrous, the smallest less than half the length of the longest, and these rather shorter than the achenium, at length separating in a ring. This plant seems to fall more readily into Prenanthes than into any other genus known to me; but it may not be a true congener of the European species.

LYGODESMIA APHYLLA, var. TEXANA, *Torr. & Gray, Fl. 2. p.* 485. Stony hills of the Pecos; June. (1302.)

MULGEDIUM PULCHELLUM, *Nutt.; Torr. & Gray, Fl. 2. p.* 498; *Gray, Pl. Fendl. p.* 115. Banks of the Limpio and of the Rio Grande; also at the copper mines, New Mexico. (1303.)

PYRRHOPAPPUS CAROLINIANUS, *DC. Prodr.* 7. *p.* 44; *Torr. & Gray, Fl. 2. p.* 495. Along the Rio Grande, above El Paso; May. (1426.)

Crepis ambigua, *Gray, Pl. Fendl. p.* 114. On the sides of the Organ Mountains, northeast of El Paso; April. (1427.) — The specimens exactly accord with those of Fendler, except that the leaves and scape-like stems are rather more setose. The plant (undistributed) which I enumerated under this name in Wright's former collection (*Pl. Wright. p.* 129) is very different, and a true Hieracium, perhaps a less shaggy form of H. longipilum.

ADDENDA.

Peganum Mexicanum, *Gray, Pl. Wright. p.* 30, *adn.* Sides of the Chiricahui Mountains, Sonora; Sept., in flower and fruit. (1428.) — The stems are numerous from a deep and lignescent root, when old decumbent, attaining 10 or 12 inches in length. Seeds narrowly clavate-oblong, slightly curved, with a closely alveolate-reticulated testa. Embryo as in P. Harmala, but more slender. — The specimens were misplaced and so overlooked at the time of the distribution.

The following are described from specimens just received by Dr. Torrey, from Dr. Parry of the Mexican Boundary Commission, who collected them last autumn on the Rio Grande below New Mexico.

Cowania ericæfolia (*Torr. in litt.*): caule ramosissimo; foliis parvis linearibus margine valde revolutis cuspidatis subtus incanis; calycis tubo breviter turbinato; petalis albis. — Crevices of limestone rocks on the Rio Grande, below Presidio del Norte, *Dr. Parry.* — "A straggling bush, one or two feet high." Remarkable for its Heath-like leaves, which are only two or three lines long. Flowers smaller than in C. Mexicana.

Laphamia bisetosa (*Torr. in litt.*): "pygmæa, suffruticulosa, subviscoso-puberula; foliis oppositis et alternis parvis ovatis vel obovatis in petiolum attenuatis subdentatis vel integerrimis resinoso-atomiferis punctatis; capitulis solitariis sessilibus 6 – 8-floris; ligulis nullis; acheniis puberulis margine lævibus; pappo e setis 2 corolla dimidio brevioribus." — Crevices of rocks in a cañon of the Rio Grande, below Presidio del Norte? Oct., *Dr. Parry.* — Plant many-stemmed from a thickened and ligneous caudex, in the manner of the genus, from one to three inches high. Leaves crowded, barely three lines long, and with a petiole of about two lines in length. Head 3 or 4 lines long, terminating the short branches. Corolla 4-toothed. Bristles of the pappus equal, rather stout, minutely scabrous. — This is the second addition which Dr. Parry and Dr. Bigelow have made to this genus. It is the more interesting, on account of its bisetose pappus and few flowers, as it narrows the interval between the sections Monothrix and Pappothrix.

Perityle Parryi (sp. nov.): subviscoso-puberula; foliis plerisque alternis reniformi-cordatis crebre dentatis nunc sublobatis; ligulis lineari-oblongis discum paullo superantibus; appendicibus styli fl. hermaph. attenuato-filiformibus; acheniis lineari-oblongis villoso-ciliatis, pilis crebris squamellis pappi æquilongis; arista unica gracillima barbellato-hispidula corolla disci paullo breviore. — In a cañon of the Rio Grande, with the preceding, *Dr. Parry.* — Heads on a slender and naked peduncle, as large as those of P. leptoglossa (4 or 5 lines long); the leaves more rounded and reniform, scarcely incised, of the same hue both sides, nearly an inch in diameter. Involucre shorter than the disk, viscid-puberulent like the leaves and branches; the scales lanceolate-linear. Ligules 2 or 3 lines long, yellow. Awn of the pappus 2 lines or more in length. Mature achenia not seen. This species ranks between P. leptoglossa and P. plumigera, most resembling the former. Its heads and flowers are thrice the size of those of the latter.

PERITYLE AGLOSSA (sp. nov.): glabella; foliis sæpius alternis rotundatis subcordatis incisis lobatisve dentatis; involucri squamis angustissime linearibus; ligulis nullis; appendicibus styli angustis subulatis; acheniis lineari-oblongis marginibus vix incrassatis villosissimo-ciliatis, pilis squamellas pappi adæquantibus; seta unica barbellata corollam disci æquante. — In a cañon of the Rio Grande, with the two preceding, *Dr. Parry.* — Plant 6 to 12 inches high from a suffrutescent base. ① Leaves (in the specimen) only half an inch in diameter, minutely puberulent under a lens with viscid or resinous granules. Heads corymbose, as large as those of the foregoing species; the peduncles bearing two or three scattered setaceous bractlets. Scales of the involucre uniserial, remarkably narrow. Corolla 3 lines long. Branches of the style not so slender as in Perityle Parryi and P. leptoglossa, but much more so than in P. Californica and P. Acmella. Achenia fully a line and a half long, blackish, glabrate on the sides; the margins ciliate with a dense and strong fringe of hairs, a few of which are also borne on the base of the slender awn. The latter is about twice the length of the achenium. — This species, which is remarkable for the want of ray-flowers, certainly fixes the position of the genus Pericome (p. 81) in the immediate neighborhood of Perityle, as I had suspected.

⁂ The CACTACEÆ of Mr. Wright's various collections will soon be published by Dr. Engelmann, in a separate memoir.

I have to correct a mistake respecting the gentleman to whose *memory* the genus PETERIA was dedicated (p. 51 of the former memoir), as, I am informed, he is still living, although he has ceased to cultivate Botany.

ERRATA.

Page 76, line 10, for "Novi Belgi," read "Novi Belgii."
" 79, " 8 from bottom, for "S. mollis," read "Solidago mollis."
" 80, " 4, for "S. albicaulis," read "L. albicaulis."
" 97, " 8 from bottom, for "puppus," read "pappus."

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Lupinus Mexicanus, 49.
    pusillus, 49.
Lygodesmia aphylla, 105.
Lychnis pulchra, 17.
Lythraceæ, 55.

Machæranthera canescens, 75.
    parviflora, 75.
    tanacetifolia, 74.
Malacothrix Fendleri, 104.
    obtusa, 105.
    sonchoides, 104.
Malpighiaceæ, 30.
Malvaceæ, 20.
Malvastrum coccineum, 20.
    leptophyllum, 20.
    pedatifidum, 20.
Medicago sativa, 41.
Mentzelia albicaulis, 59.
    multiflora, 59.
    oligosperma, 59.
Melampodium cinereum, 85.
    hispidum, 85.
    leucanthum, 85.
    ramosissimum, 85.
Melitotus parviflora, 41.
Melochia pyramidata, 24.
Melothria pendula, 60.
Menispermaceæ, 9.
Microrhamnus ericoides, 28.
Mimosa biuncifera, 51.
    borealis, 51.
    dysocarpa, 51.
    flexuosa, 51.
    fragrans, 51.
    Grahami, 52.
    Lindheimeri, 51.
    Wrightii, 52.
Mitracarpium breviflorum, 68
Mœhringia umbrosa, 18.
Mollugo verticillata, 19.
Monnina Wrightii, 31.
Mortonia scabrella, 28.
    sempervirens, 28.
Mulgedium pulchellum, 105.
Myosurus minimus, 8.
Myriophyllum heterophyllum, 59.

Nasturtium obtusum, 10.
    palustre, 10.
Nesæa longipes, 56.

Œnothera albicaulis, 56.
    biennis, 56.
    brachycarpa, 57.
    chamænerioides, 58.
    coronopifolia, 56.
    Fendleri, 58.
    Hartwegi, 58.
    lavandulæfolia, 58.
    primiveris, 58.
    rosea, 57.
    trichocalyx, 56.
    triloba, 58.
    tubicula, 58.
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Oldenlandia acerosa, 67.
    angustifolia, 68.
    humifusa, 68.
    rubra, 68.
    subviscosa, 68.
Oligomeris glaucescens, 16.
Onagraceæ, 56.
Oxalidaceæ, 25.
Oxalis decaphylla, 25.
    dichondræfolia, 25.
    Drummondii, 25.
    vespertilionis, 25.
    Violacea, 25.
    Wrightii, 25.
Oxytropis Lamberti, 45.

Pachystima Myrsinites, 29.
Palafoxia callosa, 94.
    Hookeriana, 94.
Papaveraceæ, 10.
Paronychia Jamesii, 19.
    Lindheimeri, 19.
Parthenice mollis, 85.
Parthenium incanum, 85.
    ramosissimum, 85.
Passiflora affinis, 59.
    inamœna, 59.
    tenuiloba, 59.

Passifloraceæ, 59.
Pavonia Wrightii, 24.
Pectis angustifolia, 69.
  filipes, 69.
  imberbis, 70.
  longipes, 69.
  papposa, 69.
  prostrata, 69.
  uniaristata, 69.
Perezia nana, 102.
  runcinata, 102.
  Wrightii, 102.
Pericome caudata, 82.
Perityle aglossa, 107.
  coronopifolia, 82.
  nuda, 83.
  Parryi, 106.
Petalostemon exile, 41.
Peteria scoparia, 35, 107.
Peganum Mexicanum, 106.
Phaca annua, 45.
  Candolliana, 44.
  Fendleri, 44.
  gracilenta, 44.
  triflora, 45.
Phaseolus acutifolius, 32.
  angustissimus, 33.
  macropoides, 33.
  retusus, 32.
  rotundifolius, 34.
  Wrightii, 33.
Philadelphus serpyllifolius, 64.
Philetæria horrida, 63.
Pinaropappus roseus, 103.
Pistacia Mexicana, 27.
Polyactidium delphinifolium, 77.
Polygala alba, 30.
  hemipterocarpa, 31.
  Lindheimeri, 30.
  macradenia, 30.
  ovatifolia, 30.
  puberula, 30.
  scoparia, 30.
Polygalaceæ, 30.
Porophyllum Greggii, 94.
  macrocephalum, 93.
  scoparium, 94.
Portulaca lanceolata, 19.
  pilosa, 20.
  retusa, 19.
Portulacaceæ, 19.
Potentilla paradoxa, 55.
Prenanthes exigua, 105.
Proserpinaca palustris, 59.
Prosopis Emoryi, 51.
  pubescens, 51.
Psathyrotes annua, 100.
  scaposa, 100.
Psilactis asteroides, 75.
Psoralea cuspidata, 37.
  esculenta, 37.
  floribunda, 37.
Pyrrhopappus Carolinianus, 105.

Rafinesquia Neo-Mexicana, 103.
Ranunculaceæ, 7.
Ranunculus affinis, 8.
  aquatilis, 8.
  circinnatus, 8.
  Cymbalaria, 8.
  divaricatus, 8.
  macranthus, 8.
  repens, 8.
  tridentatus, 8.
Reseda subulata, 16.
Resedaceæ, 16.
Resedella dipetala, 16.
  subulata, 16.
Rhadinocarpus, 45.
Rhamnaceæ, 27.
Rhamnus Californicus, 28.
  oleifolius, 28.
Rhus microphylla, 27.
  trilobata, 27.
  virens, 27.
Rhynchosia Texana, 34.
Ribes leptanthum, 63.
  tenuiflorum, 63.
Riddellia tagetina, 96.
Rosa blanda, 55.
Rosaceæ, 54.
Rubiaceæ, 66.
Rubus Neo-Mexicanus, 55.
Rutaceæ, 26.
Rutosma Texanum, 26.

Sageretia Michauxii, 28.
Sambucus glauca, 66.
  Mexicana, 66.
  pubens, 66.
Sanvitalia Aberti, 91.
Sapindaceæ, 30.
Saxifragaceæ, 63.
Schæfferia cuneifolia, 29.
Schkuhria abrotanoides, 95.
  Hopkirkia, 94.

SCHKUHRIA isopappa, 95.
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virgata, 95.
Wislizeni, 95.
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Scorzonella laciniata, 103.
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FASTIGIATUS, 99.
FILIFOLIUS, 99.
LOBATUS, 99.
LONGILOBUS, 99.
Plattensis, 100.
SESUVIUM PORTULACCASTRUM, 19.
sessile, 19.
SPHÆRALCEA ANGUSTIFOLIA, 21.
FENDLERI, 21.
HASTULATA, 21.
INCANA, 21.
WRIGHTII, 21.
SICYDIUM LINDHEIMERI, 60.
SICYOS eremocarpus, 62.
PARVIFLORUS, 62.
SICYOSPERMA GRACILE, 62.
SIDA ANGUSTIFOLIA, 21.
diffusa, 32.
ELLIOTTII, 21.
FILICAULIS, 22.
HEDERACEA, 21.
heterocarpa, 21.
LEPIDOTA, 21.
LONGIPES, 21.
PHYSOCALYX, 22.
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SIDALCEA MALVÆFLORA, 20.
SILENE GREGGII, 17.
laciniata, 17.
WRIGHTII, 17.
SILPHIUM SCABERRIMUM, 85.
SIMSIA EXARISTATA, 87.
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SCAPOSA, 88.
subaristata, 88.
SISYMBRIUM AURICULATUM, 12.
CANESCENS, 12.
DIFFUSUM, 12.
Sium pusillum, 65.
SOLIDAGO incana, 79.
MOLLIS, 79.
nemoralis, 79.
OCCIDENTALIS, 79.
PETIOLARIS, 79.
SOPHORA SERICEA, 49.
SPERGULARIA RUBRA, 19.
SPIRÆA DUMOSA, 54.
Stanleya Washitana, 11.
STELLARIA elongata, 18.
lanuginosa, 18.
PROSTRATA, 17.
STEPHANOMERIA MINOR, 103.
RUNCINATA, 103.
STEVIA CANESCENS, 71.
MACELLA, 70.
micrantha, 71.
STREPTANTHUS BRACTEATUS, 11.
CARINATUS, 11.
LINEARIFOLIUS, 10.
LONGIFOLIUS, 10.
MACULATUS, 11.
obtusifolius, 11.
PLATYCARPUS, 10.
virgatus, 10.
STROMBOCARPA PUBESCENS, 51.
STYLOCLINE MICROPOIDES, 84.
SYMPHORICARPUS ROTUNDIFOLIUS, 66.

TAGETES MICRANTHA, 93.
TALINUM AURIANTIACUM, 20.
PARVIFLORUM, 20.
REFLEXUM, 20.
spathulatum, 20.
TEPHROSIA LEIOCARPA, 36.
LEUCANTHA, 36.
TENELLA, 36.
TESSARIA BOREALIS, 84.
THALICTRUM clavatum, 8.
debile, 8.
FENDLERI, 7.
Richardsonii, 8.
sparsiflorum, 8.
WRIGHTII, 7.
THELESPERMA FILIFOLIA, 90.
GRACILIS, 90.
LONGIPES, 90.
THELYPODIUM WRIGHTII, 12.
THASPIUM MONTANUM, 65.
THLASPI cochleariforme, 14.
FENDLERI, 14.
Tiarella bracteata, 64.
TOWNSENDIA STRIGOSA, 78.
TRIANTHEMA MONOGYNA, 20.
TRICHOCORONIS RIVULARIS, 70.
TRIFOLIUM INVOLUCRATUM, 41.
Tripolium angustum, 76.
caricifolium, 76.

Tripolium frondosum, 76.
Trixis angustifolia, 102.
Turritis patula, 10.

Umbelliferæ, 64.
Ungnadia speciosa, 30.

Vargasia Caracasana, 98.
Verbesina podocephala, 92.
Vernonia Lindheimeri, 69.
  Jamesii, 69.
Vesicaria angustifolia, 13.
  arctica, 13.
  gracilis, 13.
  lasiocarpa, 13.
  purpurea, 14.
  recurvata, 13.
  stenophylla, 13.
Vicia exigua, 32.
  pulchella, 32.
Viguiera cordifolia, 88.
  laxa, 89.
Viguiera Texana, 89.
Villanova chrysanthemoides, 96.
Vitaceæ, 27.
Vitis æstivalis, 27.
  rupestris, 27.

Waltheria detonsa, 24.
Wislizenia refracta, 16.

Ximenesia encelioides, 92.

Zauschneria Californica, 56.
Zinnia anomala, 86.
  grandiflora, 86.
  intermedia, 86.
  pumila, 86.
  tenuiflora, 86.
Zizyphus lycioides, 27.
  obtusifolia, 27.
Zornia reticulata, 46.
Zygophyllaceæ, 26.

EXPLANATION OF THE PLATES.

PLATE XI. DRYOPETALON RUNCINATUM, p. 12.

Fig 1. A flower, enlarged.
" 2. A sepal, enlarged, seen from within.
" 3. A petal, enlarged.
" 4. The stamens and pistil, with the receptacle, equally enlarged.
" 5. A mature silique, cut across, enlarged.
" 6. Base of a dehiscent silique, more magnified, showing the seeds in place.
" 7. A seed, more magnified, transversely divided.

PLATE XII. *A.* AMOREUXIA SCHIEDEANA, Planch. (non Pl. 3), p. 26.

Fig. 1. A fruit, of the natural size.
" 2. A seed from the same, magnified.
" 3. The same, with the thin and fragile external integument, or testa, removed.
" 4. Longitudinal section of the seed, magnified, showing the homotropous embryo, &c.
" 5. Embryo detached, and more magnified.

PLATE XII. *B.* GLOSSOPETALON SPINESCENS, p. 29.

Fig. 1. Diagram of the flower.
" 2. A flower, enlarged.
" 3. Inside, and 4, outside view of a stamen, more enlarged.
" 5. The pistil, more magnified.
" 6. Vertical section of a flower through the ovary, showing the ovules, &c., magnified.
" 7. The fruit, with the persistent calyx, enlarged.
" 8. Vertical section of the same, showing the seed.
" 9. The seed with its carunculate arillus, magnified.
" 10. Transverse section of the same.

PLATE XIII. PSATHYROTES SCAPOSA, p. 100.

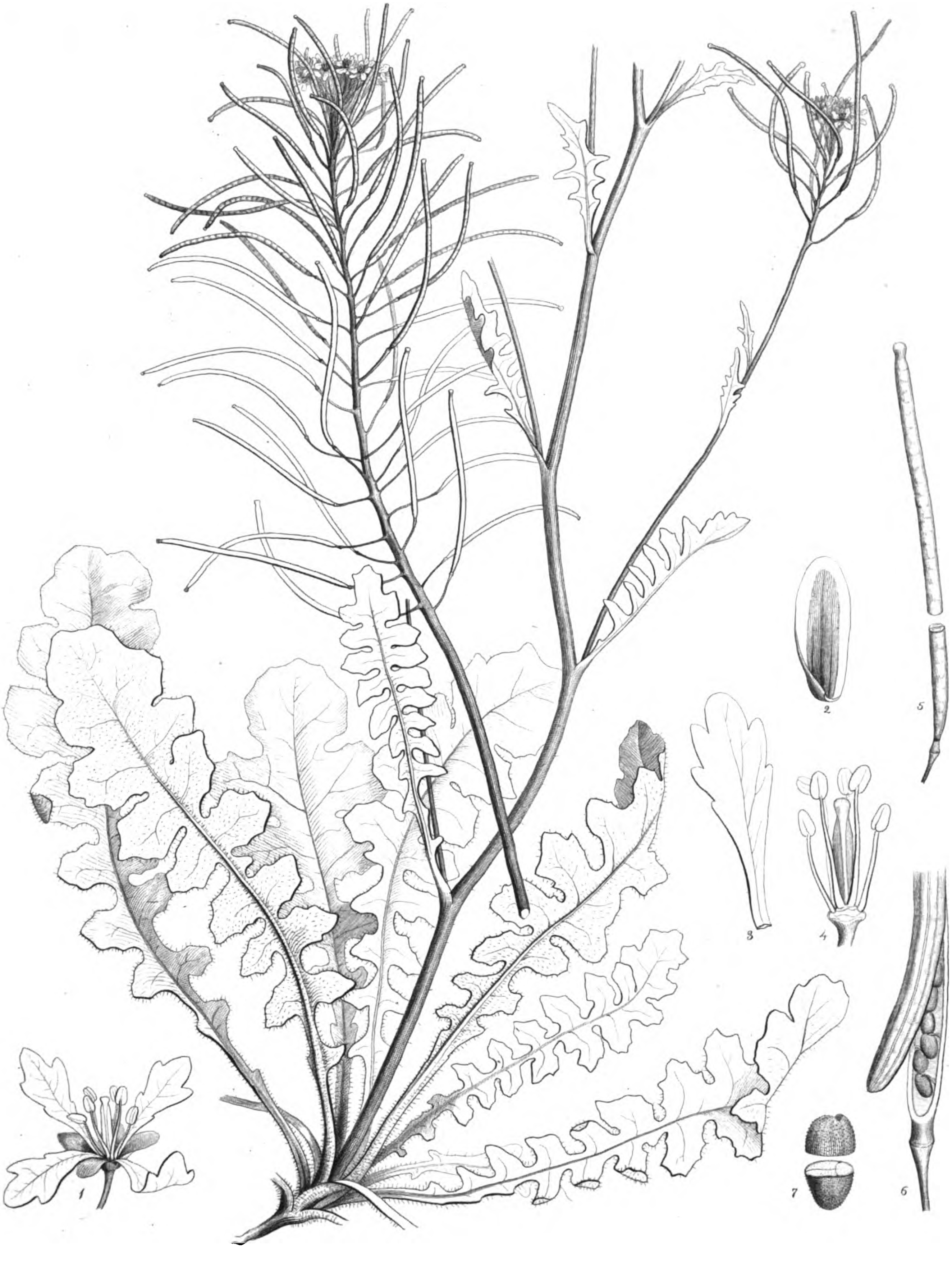
Fig. 1. A separate flower, magnified.
" 2. The corolla laid open, and the stamens, magnified.
" 3. A stamen, more magnified.
" 4. The style, equally magnified.

Fig. 5. The involucre and receptacle, from which the flowers have fallen, enlarged.
" 6. Achenium and pappus, magnified.
" 7. Vertical section of the achenium, showing the embryo, magnified.
" 8. Transverse section of the same.
" 9. One of the bristles of the pappus, highly magnified.

PLATE XIV. CALYCOSERIS WRIGHTII, p. 106.

Fig. 1. Receptacle (the scales of the involucre reflexed), with its capillary setæ, and a single flower, enlarged.
" 2. An anther, more magnified.
" 3. Summit of the style, equally magnified.
" 5. Achenium, with its exterior coroniform pappus, and the capillary pappus detached, magnified.
" 6. Transverse section of a five-ribbed achenium, magnified.
" 7. Similar section of a six-ribbed achenium.
" 8. A separate bristle of the inner pappus, more magnified.

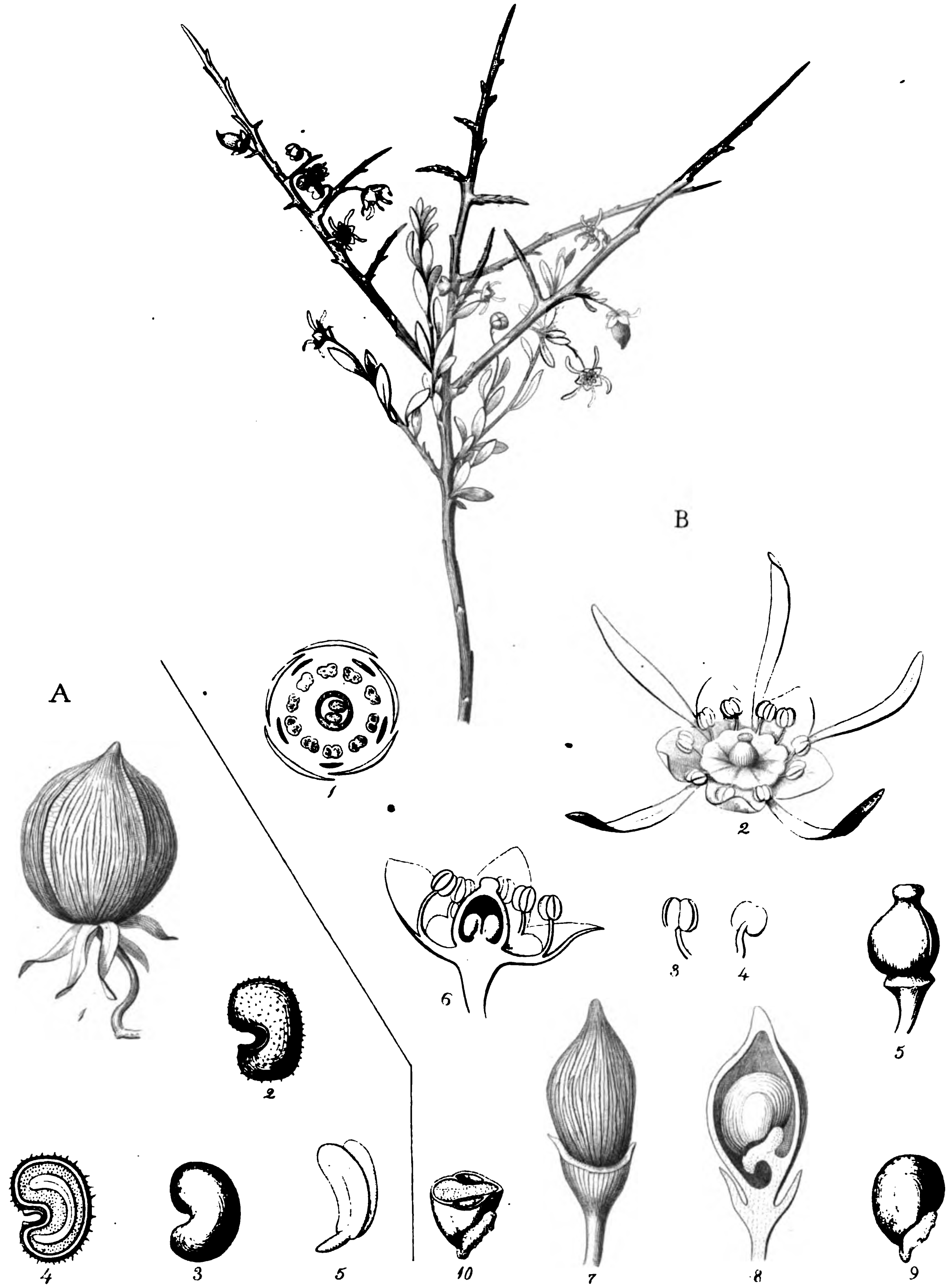
EXPLICIT. KAL. FEB. MDCCCLIII.



DRYOPETALON RUNCINATUM.

Sprague.

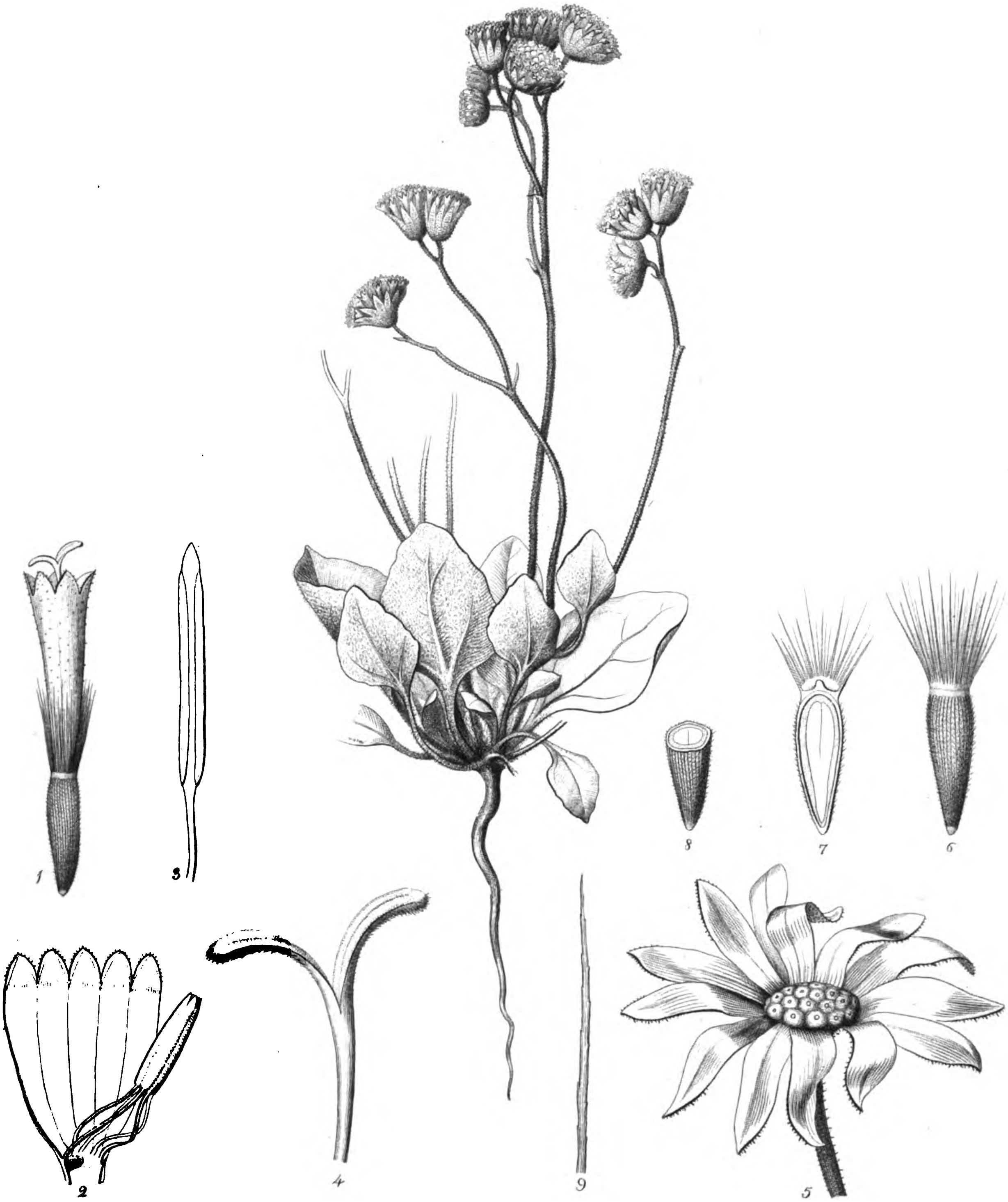
Tab. 12.



AMOREUXIA SCHIEDEANA. GLOSSOPETALON SPINESCENS.

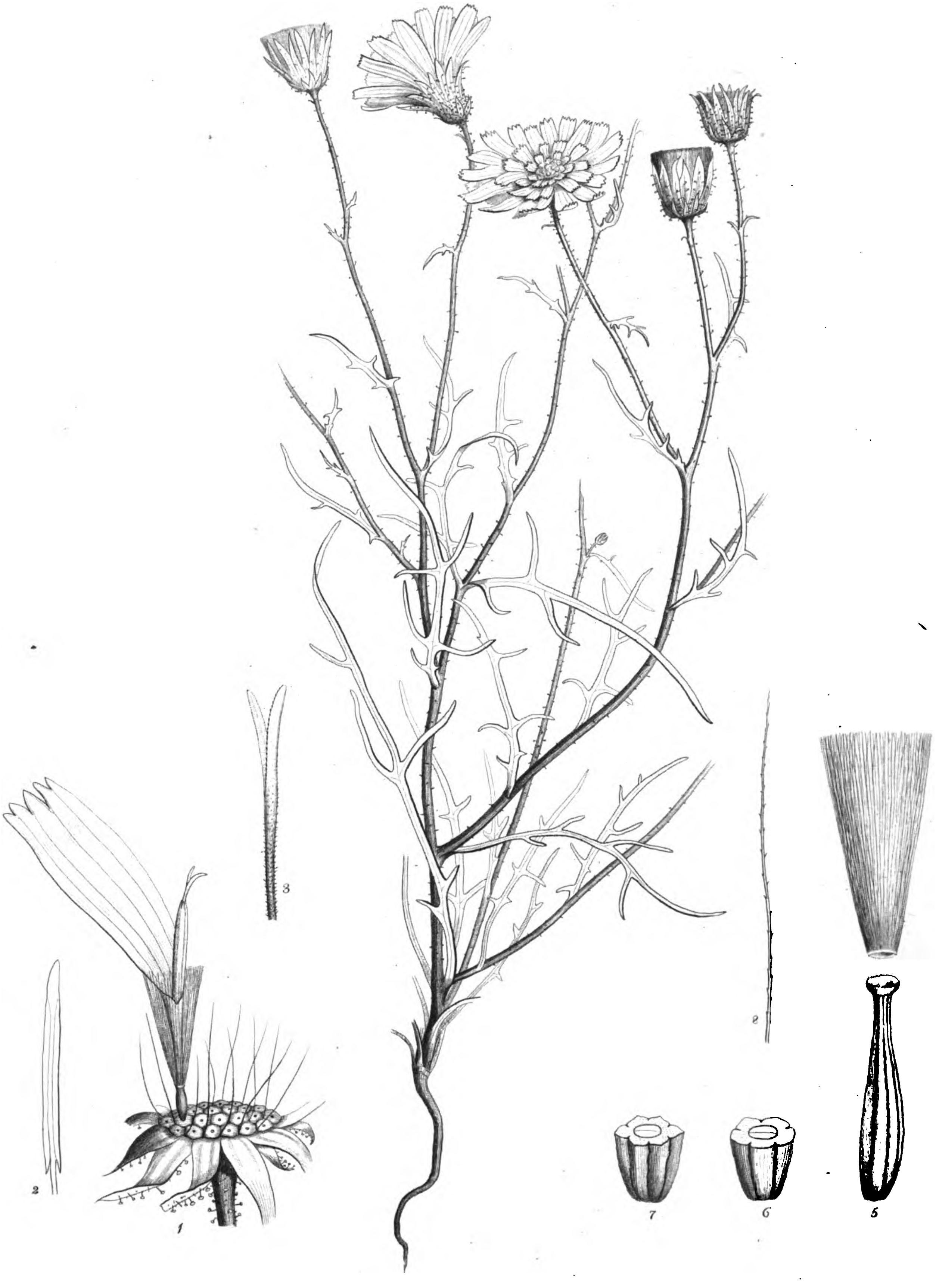
Sprague

Tab. 13.



PSATHYROTES SCAPOSA.

Sprague



CALYCOSERIS WRIGHTII.

Sprague